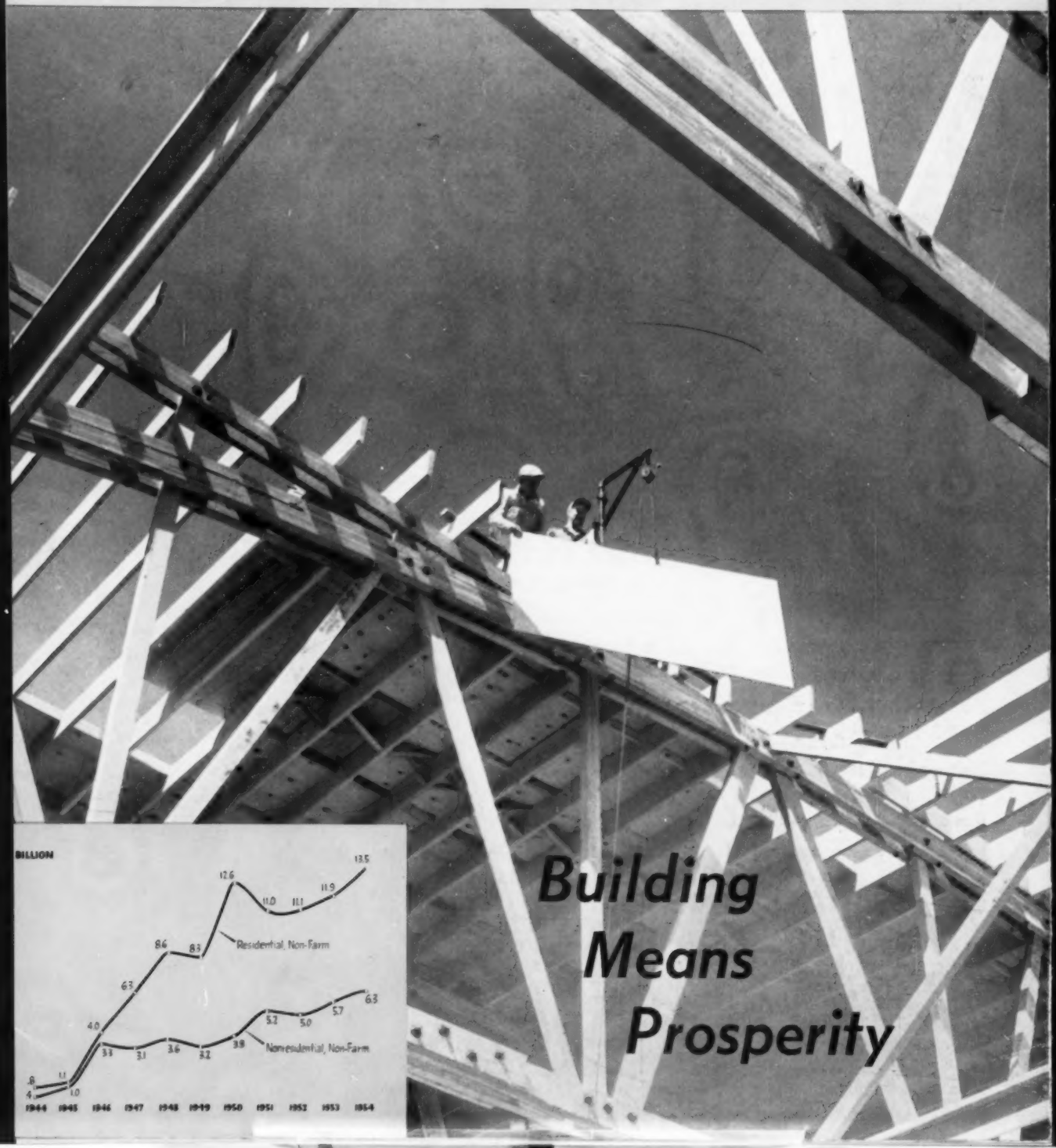
THE *Lumberman*

FOREST INDUSTRIES YEARBOOK NUMBER ★ *March 25, 1956*



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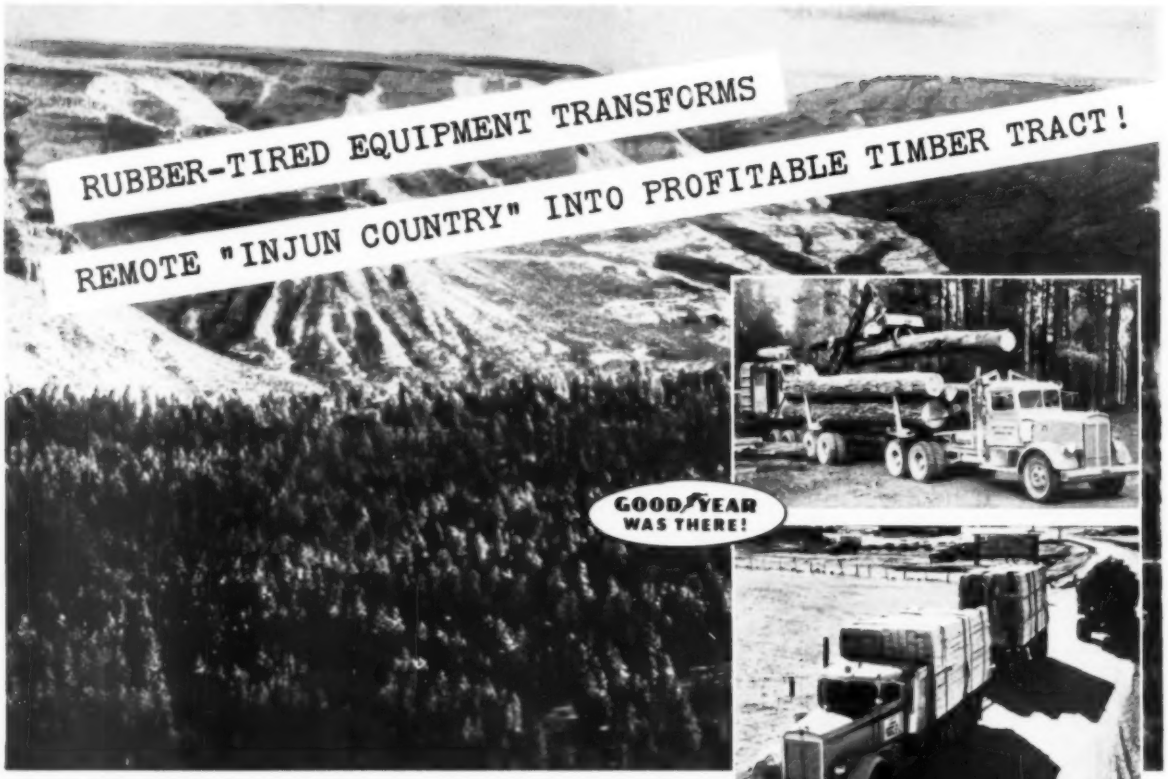

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THE Lumberman

The Production Journal of the Forest Products Industries Since 1889

MARCH 25, 1956 VOLUME 83, NUMBER 4

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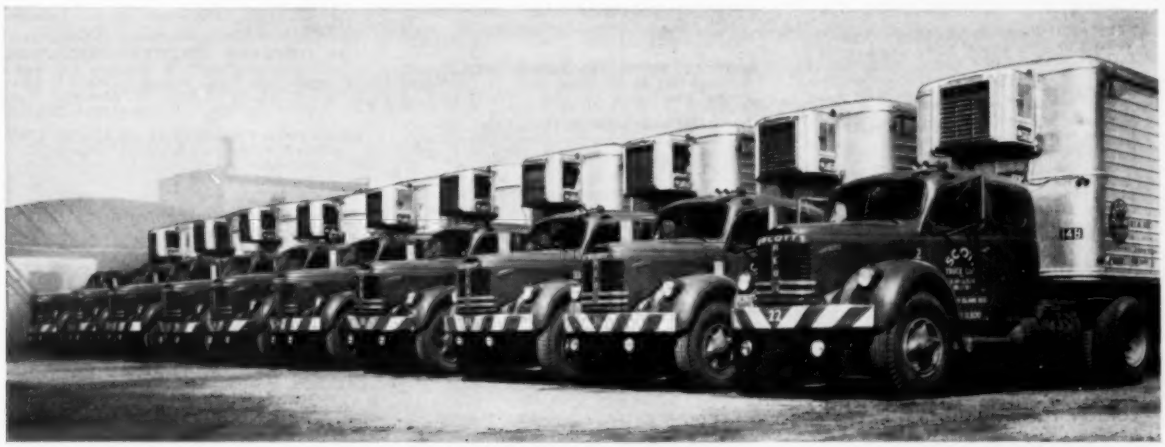

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AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, 1757 K. Street N.W., Washington 6, D.C. Pres., FRANK B. BENZON, Exec. Vice Pres., FRANK J. HANRAHAN. Annual Meeting: Shoreham Hotel, Washington, D.C., April 2-6, 1956.

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ARCHITECTURAL WOODWORK INSTITUTE, 332 South Michigan Ave., Chicago 4, Ill. Pres., C. ALBERT CARLSON, Mgr., Byrne Marcellus Company. Meeting: 4th Annual Convention, Oct. 18-19, 1956, La Salle Hotel, Chicago, Ill.

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CALIFORNIA FOREST PROTECTIVE ASSOCIATION, 681 Market Street, San Francisco 5, Calif. Pres., E. E. CARRIGER, Sec.-Mgr., W. R. SCHOFIELD. Annual Meeting: Jan. 18, 1957.

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FLORIDA FORESTRY ASSOCIATION, c/o School of Forestry, University of Florida, Gainesville, Fla. Pres., JUSTIN R. WEDELL, Sec., CHARLES G. GELTZ.

FOREST FARMERS ASSOCIATION, 66 11th N.E., Box 7284, Station "C", Atlanta, Ga. Pres., J. V. WHITFIELD, Exec. Dir., J. WALTER MYERS, JR. Meeting: April 19-20, 1956, Charleston, S.C.

FOREST INDUSTRIES RADIO COMMUNICATIONS, P.O. Box 5153, Eugene, Ore. Chmn., Exec. Com., ROBERT W. OLIN, Mgr., ELMER L. SURDAM. Meeting: To be scheduled for Washington, D.C., date unknown.

FOREST PRODUCTS RESEARCH SOCIETY, Box 2010, University Station, Madison 5, Wis. Pres., M. B. CHRISTIAN, Exec. Sec., FRANK J. ROVSEK. Meeting: June 4-7, Asheville, N.C.

FOREST PRODUCTS SAFETY CONFERENCE, The Long-Bell Lumber Co., Longview, Washington. Chmn., ROBERT P. MILLER. Meeting: April 5-6, 1956, Klamath Falls, Ore.

HAND-SPLIT RED CEDAR SHAKE ASS'N., 306 J. Vance Bldg., Seattle 1, Wash. Pres., A. B. FERGUSON, Sec., LEE OLWELL.

HARDBOARD ASSOCIATION, 205 W. Wacker Drive, Chicago 6, Illinois. Pres., K. V. HAFNER, Exec. Sec., DONALD LINVILLE. Meeting Dates and Places: Semi-Annual, May 21-22, Hotel Multnomah, Portland, Ore., 1956 Annual Meeting: Nov. 7 & 8, Drake Hotel, Chicago, Ill.

HARDWOOD DIMENSION MANUFACTURERS ASSOCIATION, 218 Broadway National Bank Bldg., Nashville 3, Tenn. Pres., W. G. SODERQUIST, Mng. Dir., J. EDGAR KENNEDY.

HARDWOOD PLYWOOD INSTITUTE, 600 S. Michigan Avenue, Chicago 5, Illinois. Pres., C. U. GRAMELSPACHER, Mng. Dir., CHARLES E. CLOSE.

INDUSTRIAL FORESTRY ASSOCIATION, 1410 S.W. Morrison Street, Portland, Ore. Chmn. ROY F. MORSE, Mng. Dir., W. D. HAGENSTEIN. Meeting: April 11, 1956, Portland.

INTERMOUNTAIN LOGGING CONFERENCE, 1330 East Lake Shore, Bigfork, Mont. Pres., GORDON A. MACGREGOR, Sec.-Mgr. CHARLES P. KEIM. Meeting: March 26, 27 & 28, 1956, Davenport Hotel, Spokane, Wash.

THE LOUISIANA FORESTRY ASSOCIATION, c/o Edgewood Land & Logging Co., Lake Charles, La. Pres., G. LOCK PARET, Exec. Sec., J. H. KITCHENS, JR. Meeting: Sept. 13-14, 1956, Bentley Hotel, Alexandria, La.

LUMBERMEN'S INDUSTRIAL RELATIONS COMMITTEE, Cascade Bldg., Portland, Ore., White-Henry-Stuart Bldg., Seattle. Pres., JUDD GREENMAN, Sec.-Mgr., WALTER DURHAM.

MAHOGANY ASSOCIATIONS, INC., 666 N. Lake Shore Drive, Chicago, Ill. Pres., ROBERT P. THOMPSON, Exec.-Sec., GEORGE N. LAMB. Meeting: Nov. 1956.

MAINE HARDWOOD MANUFACTURERS ASSOCIATION, Augusta, Maine, Statehouse, c/o MR. EVERETT GREATON.

MAPLE FLOORING MANUFACTURERS ASSOCIATION, 35 E. Wacker Drive, Chicago 1, Ill. Pres., D. S. DEWITT, Sec.-Mgr., L. M. CLADY. Meeting: Last week in January.

MILLWORK COST BUREAU, 332 So. Michigan Ave., Chicago 4, Ill. Pres., S. S. EDWARDS, Sec., O. L. APPLETON.

MISSISSIPPI FORESTRY ASSOCIATION, 313 Millsaps Bldg., Jackson. Pres., S. E. MORETON, JR., Exec. Sec., FRANK B. PITTMAN. Meeting: 2nd week of October (tentative), Edwards Hotel, Jackson

MONTANA LUMBER MANUFACTURERS ASSOCIATION, Box 394 Kalispell, Mont. Pres., G. A. MILLER, Sec., MAURICE BOORMAN. Meetings: Annual, February and on president's call.

NATIONAL ASSOCIATION OF FURNITURE MANUFACTURERS, INC., 666 N. Lake Shore Drive, Space 2140, Chicago 11, Ill. Pres., KENNETH KROEHLER, Exec. Vice Pres., JOHN M. SNOW.

NATIONAL HARDWOOD LUMBER ASSOCIATION, 59 E. Van Buren, Chicago 5, Ill. Pres., T. M. MILLETT, Sec.-Mgr., JOSEPH L. MULLER. Meeting: Oct. 18-20, 1956, Hotel Hilton, Chicago.

NATIONAL INSTITUTE OF WOOD KITCHEN CABINETS, 77 W. Washington St., Chicago 2, Ill. Pres., RICHARD C. CHAPMAN, Mutschler Brothers Co., Nappenee, Ind.

Associations

NATIONAL LUMBER MANUFACTURERS ASSOCIATION, 1319 18th Street N.W., Washington 6, D.C. Pres., LAWRENCE D. KELLOGG, Exec. Vice Pres., LEO V. BODINE. Meeting: Spring, May 28-30, 1956, The Olympic Hotel, Seattle, Wash. Annual Meeting: Nov. 8-10, 1956, Shoreham Hotel, Wash., D.C.

NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, 814 Sterick Bldg., Memphis, Tenn. Pres., J. G. SMITH, Exec. Vice Pres., HENRY H. WILLINS. Meeting: June 20-21, Hotel Peabody, Memphis.

NATIONAL WOODEN BOX ASSOCIATION, Barr Bldg., Washington 6, D.C. Pres., J. D. BRONSON, Exec. Vice Pres., C. D. HUDSON. Pacific Div.: 55 New Montgomery Street, San Francisco.
Inland Empire Association: Doneen Bldg., Wenatchee, Wash.

NATIONAL WOODEN PALLET MANUFACTURERS ASSOCIATION, Barr Bldg., Washington 6, D.C. Pres., W. R. JORDAN, Pine Bluff, Ark., Sec.-Mgr., W. H. SARDO—JR., Washington, D.C. Semi-Annual Meeting: January. Annual Meeting: June 24-26, 1956, Williamsburg, Virginia.

NATIONAL WOODWORK MANUFACTURERS ASSOCIATION, INC., 332 South Michigan Ave., Chicago 4, Illinois. Sec.-Mgr., O. C. LANCE.

NORTHEASTERN LOGGERS ASSOCIATION, Old Forge, N. Y. Pres., HENRY C. WALDO, Sec., FRANCIS E. SMALLEY. Meeting: April 25-26, Woodstock Inn, Woodstock, Vermont.

NORTHERN HEMLOCK AND HARDWOOD MANUFACTURERS ASSOCIATION, Washington Bldg., Oshkosh, Wis. Pres., ABBOTT M. FOX, Mgr., HAROLD S. CROSBY.

NORTHERN MONTANA FORESTRY ASSOCIATION, Kalispell, Mont. Pres., J. F. LALLY, Somers, Mont., Sec., M. E. BOORMAN, Kalispell, Mont.

NORTHERN PINE MANUFACTURERS ASSOCIATION, 4329 Oakland Ave., Minneapolis, Minn. Pres., J. A. MATHIEU, Sec., W. A. ELLINGER. Meeting: May 8, 1956 (tentative).

NORTHWEST CHRISTMAS TREE ASSOCIATION, P. O. Box 429, Olympia, Wash. Pres., HOMER FULTON, Vice Pres., MARCUS HECKMAN, Scappoose, Ore. Meeting: Mar. 18-19; Fall—Sept.

NORTHWEST HARDWOOD ASSOCIATION, 3253 Commodore Way, Seattle 99, Wash. Pres., E. J. NIST, Sec.-Mgr., HARRY O. MITCHELL. Meetings: Quarterly.

NORTHWEST WOOD PRODUCTS CLINIC, P. O. Box 291, University Station, Moscow, Idaho. Pres., D. L. HAYNES, Sec.-Treas., EVERETT ELLIS. Meeting: April 10-11, 1956, Davenport Hotel, Spokane.

NORTHWESTERN CALIFORNIA LUMBERMEN'S CLUB, Box 524, Eureka, Calif. Pres., ARCH LEFORS, Sec.-Treas., DON M. ODER. Meeting: Every month except June, July, August.

OLYMPIC LOGGING CONFERENCE, P. O. Box 668, Port Angeles, Washington. Pres., A. H. HALEY, Sec.-Mgr., WALLY FONTAINE. Meeting: May 3-4, 1956, Empress Hotel, Victoria, B. C.

OREGON COAST OPERATORS, 175 N. Second St., Coos Bay, Ore. Pres., D. G. BAXTER, Sec.-Mgr., KARL F. GLOS.

OREGON FOREST FIRE ASSOCIATION, U. S. National Bank Bldg., Portland, Ore. Sec.-Treas., CARL V. HERSEY.

PACIFIC LOGGING CONGRESS, 1222 American Bank Bldg., Portland 5, Ore. Pres., HERBERT W. McMAHAN, Sec.-Treas., CARWIN WOOLLEY. Annual Meeting: Nov. 12-14, 1956, San Francisco, Calif.

PACIFIC LUMBER INSPECTION BUREAU INC., White-Henry-Stuart Bldg., Seattle, Wash. Pres., M. A. WHITMAN, Sec.-Mgr., HARRY W. MURPHY. Meeting: April. Branch Offices: Vancouver, B. C.; Tacoma, Aberdeen, Longview, Wash.; Portland, Roseburg, Coos Bay, Ore.; Eureka, Calif.

PACIFIC NORTHWEST LOGGERS ASSOCIATION, White-Henry-Stuart Bldg., Seattle, Wash. Pres., D. A. KURTZ, Sec.-Mgr., E. T. CLARK. Meeting: January.

PHILIPPINE MAHOGANY ASSOCIATION, INC., 111 W. 7th, Los Angeles, Calif. Pres., WALTER G. SCRIM, Sec.-Treas., GEORGE D. SCRIM. Meeting: July 15-19, The Greenbrier, White Sulphur Springs, W. Va.

PLYWOOD RESEARCH FOUNDATION, 620 E. 26th Street, Tacoma 4, Wash. Pres., ARNOLD KOUTONEN, Exec. Dir., H. R. EVANS. Meeting: September, Tacoma, Wash.

PONDEROSA PINE WOODWORK, 105 W. Monroe Street, Chicago, Ill. Pres., J. D. ROWLAND, Gen. Mgr., R. H. MORRIS.

PREFABRICATED HOME MANUFACTURERS' INSTITUTE, 908—20th St., N.W., Washington 6, D.C. Pres., P. S. KNOX, JR., Mgr., HARRY H. STEIDLE. Meeting: Mar. 25-26-27, Palmer House, Chicago, Ill.

PUGET SOUND LOG SCALING & GRADING BUREAU, 529 Perkins Bldg., Tacoma 2, Wash. Pres., T. R. SHELDON, Mgr., B. J. DEMERS. Meeting: Second Tuesday, June, Seattle.

RAINIER FOREST ASSOCIATION, 949 Henry Bldg., Seattle, Wash. Field Hdqrs., Elbe, Wash. Pres., BRUCE E. LOONEY, sec.-Treas., C. S. COWAN.

RED CEDAR SHINGLE BUREAU, 5510 White Bldg., Seattle, Wash. Pres., H. V. Whittall, Sec.-Treas., VIRGIL PETERSON. Meeting: Early December.

REDWOOD REGION CONSERVATION COUNCIL, 576 Sacramento Street, San Francisco 11, Calif. Sec., BEN S. ALLEN.

REDWOOD REGION LOGGING CONFERENCE, 102 The Uplands, Berkeley 5, Calif. Pres., HENRY K. TROBITZ, Sec.-Mgr., EMANUEL FRITZ. Meeting: Ukiah, Calif., May 25-26.

ROOSEVELT LAKE LOG OWNERS ASSOCIATION, 721 W. Second Ave., Spokane 4, Wash. Pres., M. GALE BEALS, Sec.-Mgr., GEORGE J. TICHY.

SAWMILL CLUB OF NORTHERN CALIFORNIA, c/o Sacramento Box and Lumber Co., Woodleaf, Calif. Pres., JOHN MASTELLAR, Sec.-Treas., TOM FLEMING

SIERRA-CASCADE LOGGING CONFERENCE, 985 South St., Redding, Calif. Pres., JAMES COONAN. Sec.-Treas., L. D. WAMBOLD. Meeting: Feb., '47, Sacramento, Calif.

SOCIETY OF AMERICAN FORESTERS, 17th and Pennsylvania N.W., Mills Bldg., Washington, D.C. Pres., DeWITT NELSON, Exec. Sec., HENRY CLEPPER. Meeting: Oct. 14-17, 1956, Peabody Hotel, Memphis, Tenn.

SOUTHEASTERN LUMBERMEN'S CLUB, P. O. Box 448, Jacksonville 1, Fla. Pres., SAM E. HOUSTON, Sec., ETHALIND McCARTHY. Meets several times during year.

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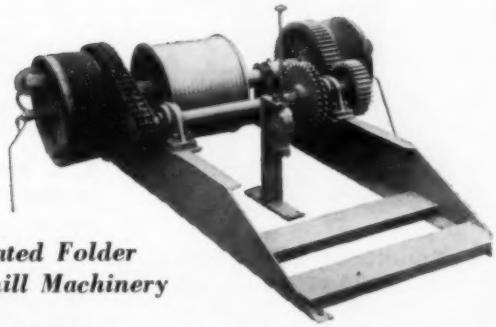
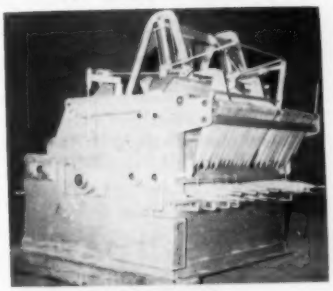
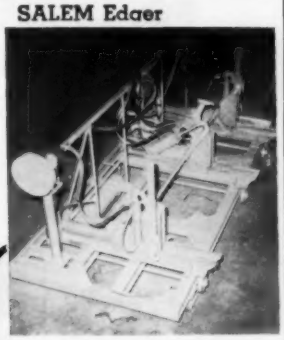


SALEM Feed Works



SALEM Edger



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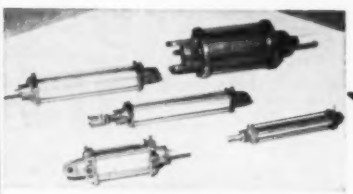

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Associations

SOUTHERN CYPRESS MANUFACTURERS ASSOC., 2133 Kings Avenue, Jacksonville, Fla., P. O. Box 5772. Pres., EDWARD C. ROE. Sec.-Mgr., J. A. PRESTRIDGE. Meeting: Tentatively May 24-25, Ponte Vedra.

SOUTHERN FURNITURE MANUFACTURERS ASSOCIATION, High Point, N. C. Pres., WM. P. KEMP. Exec. Vice Pres., JAMES T. RYAN. Annual Meeting: Nov. 2-3, The Greenbrier, White Sulphur Springs, W. Va.

SOUTHERN HARDWOOD PRODUCERS, INC., Sterick Bldg., Memphis 3, Tenn. Pres., L. D. KELLOG, Mgr., L. J. HEATHERLY.

SOUTHERN HARDWOOD TRAFFIC ASSOCIATION, Commerce Title Bldg., P. O. Box 214, Memphis 1, Tenn. (Dist. Offices: Louisville, New Orleans, Helena, Ark.; Knoxville.) Sec.-Mgr., C. A. NEW. Meeting: Late March.

SOUTHERN OREGON CONSERVATION & TREE FARM ASSOCIATION, Goldy Bldg., Medford, Ore. Pres., ARTHUR DAVIES, Sec.-Mgr., LEWIS L. SIMPSON. Meeting: Early Spring.

SOUTHERN PINE ASSOCIATION, National Bank of Commerce Bldg., New Orleans, La. Pres., ARTHUR TEMPLE, JR., Sec.-Mgr., S. P. DEAS. Meeting: April 4-6, 1956, New Orleans.

SOUTHERN PINE INSPECTION BUREAU, National Bank of Commerce Bldg., New Orleans 4, La. Pres., B. A. MAYHEW, Sec.-Mgr., A. S. BOISFONTAINE. Meeting: April 5, 1956, New Orleans.

SOUTHERN PULPWOOD CONSERVATION ASSOCIATION, 1224 Peachtree Street N.E., Atlanta 9, Ga. Pres., N. W. SENTELL, Forester and Gen. Mgr., H. J. MALSBERGER.

SOUTHERN WOODWORK ASSOCIATION, 1050 Ponce de Leon Avenue N.E., Atlanta 83, Ga. Pres., HERBERT J. BREMERMANN, Counselor, JOSEPH G. ROWELL. Meeting: Spring —May 23-24, 1956, Henry Grady Hotel, Atlanta. Fall Meeting: November.

TACOMA LUMBERMEN'S CLUB, P. O. Box 757, Tacoma 1, Wash. Pres., TOM MURRAY, JR., Sec.-Treas., DON HARTMAN. Meetings: Last Friday of each month.

TEXAS FORESTRY ASSOCIATION, Pasadena, Texas. Pres., W. R. CRUTE, Exec. Sec., E. R. WAGONER. Meeting: Second Friday in October.

TEXAS LUMBER MANUFACTURERS ASSOCIATION, Box 58, Lufkin, Texas. Pres., PAUL F. HURSEY, Sec.-Treas., A. E. CUDLIPP.

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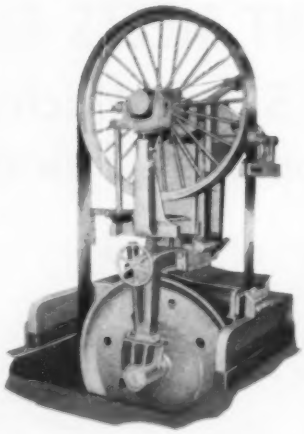

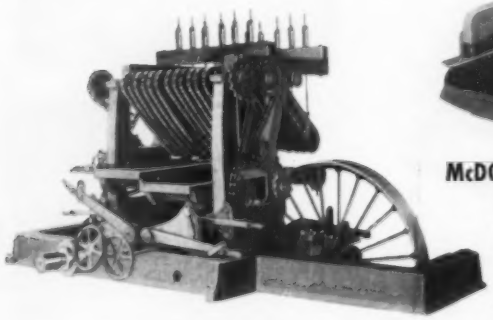

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TIMBER PRODUCERS ASSOCIATION, 516 Lyceum Bldg., Duluth 2, Minn. Pres., CARL J. DAHLBERG, Exec. Sec., JOHN V. HOENE. Annual Meeting: April 27, Hotel Spalding, Duluth, Minn.

TIMBER PROUCTS MANUFACTURERS ASSOCIATION, 721 W. Second, Spokane 4, Wash. Pres., LAWRENCE R. PUGH, Mgr., GEORGE J. TICHY. Branch Office: 801 S. 5th, Missoula, Mont., D. L. BRIGHT, Field Rep.

U. S. RED CEDAR SHINGLE INDUSTRY, 6623 White Bldg., Seattle 1, Wash. Pres., R. D. MACKIE, Sec.-Mgr., D. M. WILLIAMS. Meeting: February.

WASHINGTON FOREST FIRE ASSOCIATION, 949 Henry Bldg., Seattle, Wash. Pres., MARTIN N. DEGGELLER, Mgr., S. C. COWAN. Meeting: April 6, 1956.

WASHINGTON STATE FORESTRY CONFERENCE, 949 Henry Bldg., Seattle, Wash. Pres., DEAN GORDON MARCKWORTH, Sec.-Treas., W. H. LARSON. Meeting: November, 1956, Seattle.

WEST COAST LUMBERMEN'S ASSOCIATION, 1410 S. W. Morrison Street, Portland, Ore. Branch Offices: White-Henry-Stuart Bldg., Seattle, Wash.; 180 Eleventh Avenue E., Eugene, Ore.; 23 Goldy Bldg., Medford, Ore.; Room 400 Statler Center, Los Angeles; 1625 Eye Street N. W., Washington 6, D.C. Pres., N. B. GIUSTINA, Exec. Vice Pres., H. V. SIMPSON. Meeting: Mar. 21, 22, 1956.

WESTERN FOREST INDUSTRIES ASSOCIATION, 526 Henry Bldg., Portland 4, Ore. Pres., RAY C. SWANSON.

WESTERN FORESTRY & CONSERVATION ASSOCIATION, U. S. Nat'l Bk. Bldg., Portland, Ore. Pres., JOHN E. LIERSCH, Forest Counsel, STUART MOIR. Meeting: Dec. 4-7, 1956, Empress Hotel, Victoria, B. C.

WESTERN LUMBER MANUFACTURERS, INC., Room 769—681 Market Street, San Francisco 5, Calif. Sec.-Mgr., PERRY A. THOMPSON. Meeting: First Saturday in February and first Saturday in August.

WESTERN PINE ASSOCIATION, Yeon Bldg., Portland 4, Ore. Pres., A. L. HELMER, Sec.-Mgr., S. V. FULLAWAY, JR. Meeting: March. Research Laboratory—CARL RASMUSSEN in charge; 7733 S. E. 13th Ave., Portland 2, Ore.

WESTERN RED & NORTHERN WHITE CEDAR ASSOCIATION, 703 Lumber Exchange, Minneapolis 1, Minn. Sec., D. G. SMITH, Sec., c/o National Poles Treating Div., Minnesota & Ontario Paper Co., 500 Baker Arcade, Minneapolis 2, Minn.

WESTERN RED CEDAR LUMBER ASSOCIATION, 4403 White-Henry-Stuart Bldg., Seattle, Wash. Pres., R. M. INGRAM, Sec.-Mgr., ARTHUR I. ELLSWORTH. Meeting: May 25, 1956, Harrison Hot Springs, B. C.

WESTERN WOOD-PRESERVING OPERATORS' ASSOCIATION, 1410 S. W. Morrison St., Portland 5, Ore. Pres., RALPH DREITZLER, Sec., W. R. BOND.

WILLAMETTE VALLEY LOGGING CONFERENCE, Osburn Hotel, Eugene, Ore. Pres., DAVE BURWELL, Sec., A. D. McREYNOLDS.

THE WOODEN BOX INSTITUTE, 55 New Montgomery, San Francisco, Calif. Pres., C. O. Thompson.

U. S. Retail & Wholesale Lumber Trade Organizations

NATIONAL-AMERICAN WHOLESALE LUMBER ASSOCIATION, 41 E. 42nd Street, New York 17, N. Y. Pres., J. PHILIP BOYD, Sec.-Dir. Mgr., SID L. DARLING, Western Mgr., PAUL C. STEVENS, Yeon Bldg., Portland 4, Ore. Meeting: June 19, 20, 1956, Hotel Vancouver, Vancouver, B. C.

NATIONAL ASSOCIATION OF COMMISSION LUMBER SALESMEN, 608 Wall Bldg., 3903 Olive St., St. Louis 8, Missouri. Pres., E. R. SALUGHTER, Sec.-Mgr., G. R. GLOOR.

NATIONAL PLYWOOD DISTRIBUTORS ASSOCIATION, 20 North Wacker Drive, Chicago 6, Ill. Pres., LEONARD E. HALL, Portland, Ore., Mgr., CHARLES E. DEVLIN, Chicago. Meetings: West Coast, Feb. 8, 1956, Ambassador, Los Angeles. Midwest, Feb. 15, 1956, Coronado, St. Louis, Mo. Northeast, Feb. 17, 1956, Biltmore, New York. Southern, Mar. 2, 1956, Roosevelt, New Orleans, La. Annual Convention: Colorado Springs, Colorado, The Broadmoore, May 15 to 19 and 20, 1956.

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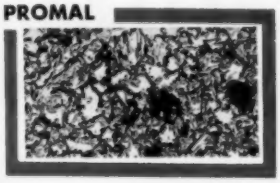

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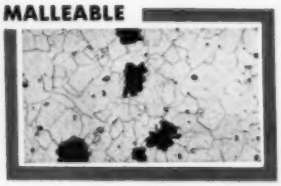

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Associations

NATIONAL RETAIL LUMBER DEALERS ASSOCIATION, Suite 302, Ring Bldg., 18th and M Streets, N.W., Washington, D.C. Pres., R. A. SCHAUB, Exec. Vice Pres., H. R. NORTHRUP. Meetings: Spring, May 13-18, 1956, Washington, D.C.; Annual, Dec. 7-8-9, Conrad Hilton Hotel, Chicago; Exposition, Dec. 10-13, International Amphitheatre, Chicago, Ill.

NEW ENGLAND WHOLESALE LUMBER ASSOCIATION, 419 Boylston St., Boston 16, Mass. Exec. Sec., LOUIS S. DAVIS.

NORTHERN SASH & DOOR JOBBERS ASSOCIATION, 30 N. LaSalle Street, Chicago 2, Ill. Pres. PHILLIP S. MALINGER, Sec., CARL W. NAGLE. Meeting: Oct. 8-10, 1956, Shoreham Hotel, Washington, D.C.

NORTHWESTERN LUMBERMEN'S ASSOCIATION, 1013 Fourth Avenue South, Minneapolis 4, Minn. Pres., WALTER E. WILL, Sec., W. H. RANDEAUX.

SOUTHERN SASH & DOOR JOBBERS ASSOCIATION, 920 Sterick Bldg., Memphis, Tenn. Pres., JAMES M. GREEN, Sec.-Treas., THOMAS BIRCHFIELD. Meeting: June 11-12, 1956, Hotel Peabody, Memphis, Tenn., Dec. 2-4, 1956, Statler Hilton Hotel, Dallas, Texas.

WESTERN RETAIL LUMBERMENS ASSOCIATION, 333 First West, Seattle 99, Washington. Pres., R. M. SLETTEDAHL, Mng. Dir., W. C. BELL.

Canadian Forest Industries Directory of Associations

ALBERTA FOREST PRODUCTS ASSOCIATION, 10126 110th St., Edmonton, Alberta. Pres. D. A. MACKAY, Mgr. W. G. EVANS. Meetings—monthly, Edmonton.

ASSOCIATION OF BRITISH COLUMBIA FORESTERS, c/o Faculty of Forestry, Univer. of British Columbia, Vancouver 8, B.C. Pres. KENNETH G. MCCANNEL, Registrar F. M. KNAPP.

B. C. COAST WOODS TRADE EXTENSION BUREAU, 550 Burrard St., Vancouver, B.C. Sec. CLEVE EDGETT.

BRITISH COLUMBIA LOGGERS' ASSOCIATION, Room 401, 550 Burrard Street, Vancouver 1, B.C. Chairman Board of Directors, OTIS D. HALLIN, Sec.-Mgr., JOHN N. BURKE. Annual Meeting: March.

BRITISH COLUMBIA LUMBER MANUFACTURERS ASS'N., 550 Burrard Street, Vancouver 1, B.C. (New president to be elected March 6, 1956) Exec. Vice Pres., L. R. ANDREWS, Sec., N. R. W. DUSTING. Annual Meeting: March.

B. C. LUMBER SURVEY LTD., 1490 W. Broadway, Vancouver, B.C. Pres., H. E. ATKINSON, Sec.-Mgr., W. J. ANDREW. Meeting: Mid-January 1957.

CANADIAN FORESTRY ASSOCIATION, B.C. Division, 550 Burrard Street, Vancouver, B.C., Chmn., M. J. FOLEY, Sec.-Mgr., WILLIAM MYRING.

CANADIAN INSTITUTE OF FORESTRY, 10 Manor Rd. W., Toronto 7, Ont. Sec., JAMES D. COATS.

CANADIAN INSTITUTE OF TIMBER CONSTRUCTION, 140 Wellington Street, Ottawa 4, Ont. Pres., W. M. HALL, American Fabricators Ltd., Vancouver, B.C., Exec. Vice Pres., R. F. DEGRACE, Convention and Annual Meeting: March 27-29, Royal York Hotel, Toronto.

CANADIAN LUMBERMEN'S ASSOCIATION, Timber-House, 27 Goulbourn Avenue, Ottawa, Canada. Pres., R. HALLIDAY, Sec.-Mgr., W. J. LECLAIR.

CANADIAN PULP & PAPER ASSOCIATION, WESTERN DIVISION, 550 Burrard Street, Vancouver, B.C. Chmn., CLIFFORD CRISPIN, Sec.-Mgr., LEANDER MANLEY.

CANADIAN PULP AND PAPER ASSOCIATION, WOODLANDS SECTION, 2280 Sun Life Bldg., Montreal 2. Chmn., H. A. SEWELL, Mgr., W. A. E. PEPLER. Meeting: Mar. 27-29.

EASTERN ONTARIO RETAIL LUMBER DEALERS' ASSOCIATION, c/o Mitchell & Wilson, Ltd., Gananoque, Ont. Pres., R. B. WILKINSON. Sec.-Treas., FRED LAUGHTON.

INTERIOR BOX MANUFACTURERS ASSOCIATION, 608 Marine Bldg, Vancouver, B.C. Chmn., H. B. SIMPSON, Sec., L.J.A. REES.

INTERIOR LUMBER MANUFACTURERS ASSOCIATION, 608 Marine Bldg., Vancouver, B.C. Pres., HARVEY A. MCDIARMID, Sec.-Mgr., L.J.A. REES Meeting: March each year.

MAINLAND MILLWORK INSTITUTE, 3034 Main Street, Vancouver, B.C. Pres., J. F. SIGURDSON, Mgr., H. F. FLEMING. Meetings: Twice Monthly.

NATIONAL RETAIL LUMBERMEN'S COUNCIL OF CANADA, 1490 W. Broadway, Vancouver, B.C. Pres., C. PORTER, Sec.-Mgr., W. J. ANDREW Meeting: Sept. 1956

NORTHERN INTERIOR LUMBERMEN'S ASSOCIATION, Suite 305, 1705 Third Avenue, Prince George, B.C. Pres., F. W. DOBSON, Sec.-Mgr., R. J. GALLAGER. Convention: May 23-24-25, 1956.

NORTHWESTERN ONTARIO TIMBER OPERATORS' ASSOCIATION, Room 3, Tomlinson Bldg., Port Arthur, Ont. Pres., H. H. STYFFE, Mgr., R. A. HOLLONQUIST. Meeting: Jan. 1956.

ONTARIO FOREST INDUSTRIES ASSOCIATION, 159 Bay Street, Toronto, Ontario. Pres. J. W. MCNUTT, Mgr., C. R. MILLS. Meeting: Jan. 22, 1957. Branch: Port Arthur, Ont.

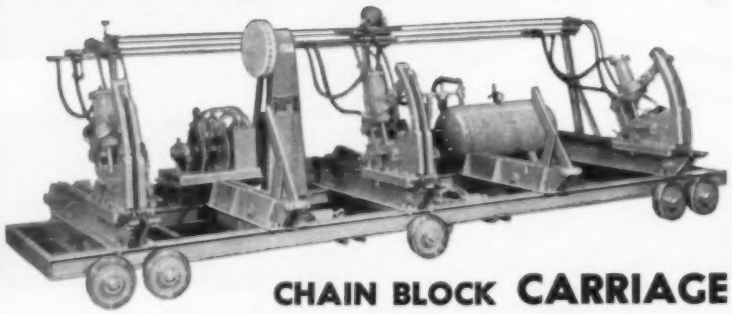
PLYWOOD MANUFACTURERS ASSOCIATION OF BRITISH COLUMBIA, Suite 303, 550 Burrard Street, Vancouver 1, B. C. Pres., J. S. ARMSTRONG, Mgr. J. B. ARMSTRONG. Meeting: Probably March.

THE QUEBEC FOREST INDUSTRIES ASSOCIATION, LTD., 63 St. Anne St., Quebec City (4). Pres., J. V. PERRIN, Mgr. & Sec., EDGAR PORTER, Treasurer, F. J. MIEDEMA (Mrs.), Ass't Mgr., J. A. COTE. Meeting: January 23, 1957.

THE QUEBEC LUMBER MANUFACTURERS' ASSOCIATION, 27 Rue Buade, Quebec 4, P.Q. Mgr., MAURICE GERIN, Pres., J. E. ATKINSON. Annual Meeting: May 18-19, 1956, Quebec City, Canada.

TRUCK LOGGERS ASSOCIATION OF B. C., 425 Howe St., Vancouver, B. C. Pres., JACK E. FLETCHER. Sec.-Mgr., TOM NOVIS.

PETERS SAWMILL MACHINERY
Custom Engineered For Efficiency



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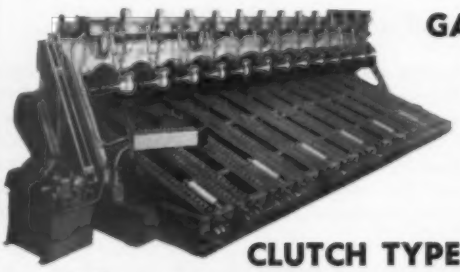

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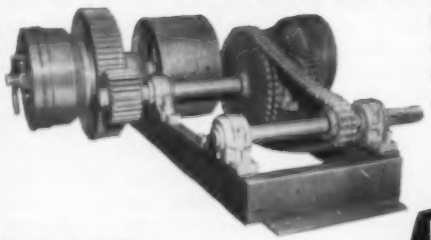

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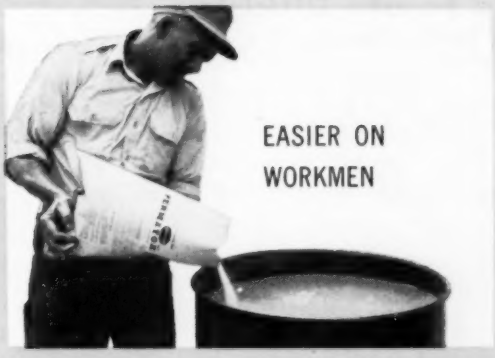

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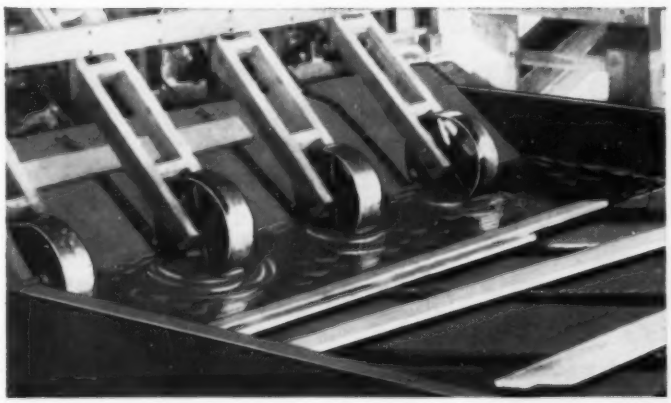

Mechanical dipping vat, as shown here, is the usual method of applying Permatox 10-S. Lumber also can be sprayed or dipped in bulk. Hand dipping is often used at small mills. Consult Chapman for details.

Permatox 10-S

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WESTERN RETAIL LUMBERMEN'S ASSOCIATION, 407 Scott Block, Winnipeg 1, Manitoba, Canada. Pres., H. B. GOURLEY, Sec.-Mgr., HECTOR J. CRAIG. Annual Convention: January 31-Feb. 1, 1957.

WHOLESALE LUMBER DEALER ASSOCIATION INC., Rm. 5, 2487 Bloor Street, W., Toronto 9, Ont. Sec.-Mgr., G. MILLWARD. Meeting: 3rd Monday, 12:30 p.m. Royal York Hotel.

Public Forestry Officials

Forest Service Offices

CHIEF'S OFFICE—R. E. McARDLE, Chief, U. S. Forest Service, Washington 25, D. C.
REGION 1—P. D. HANSON, Regional Forester, Federal Bldg., Missoula, Mont.
REGION 2—DONALD E. CLARK, Regional Forester, Bldg. 85, Denver Federal Center, Denver 2, Colo.
REGION 3—FRED KENNEDY, Regional Forester, 510 Second St., Albuquerque, N. M.
REGION 4—CHESTER J. OLSEN, Regional Forester, Forest Service Bldg., Ogden, Utah.
REGION 5—Charles A. Connaughton, Regional Forester, 630 Sansome St., San Francisco 11, Calif.
REGION 6—J. HERBERT STONE, Regional Forester, P. O. Box 4137 (729 N.E. Oregon St.), Portland 8, Ore.
REGION 7—CHARLES L. TEBBE, Regional Forester, Bankers Securities Bldg., Philadelphia 7, Pa.
REGION 8—C. OTTO LINDH, Regional Forester, 50 Seventh St., N.E., Atlanta 5, Ga.
REGION 9—H. DEAN COCHRANE, Regional Forester, 623 N. Second St., Milwaukee 3, Wis.
REGION 10—A. W. GREELEY, Regional Forester, Box 1631, Juneau, Alaska.

FS Experiment Stations

ALASKA FOREST RESEARCH CENTER, P. O. Box 740, R. F. TAYLOR, Research Center Leader, Juneau, Alaska.

CALIFORNIA FOREST AND RANGE EXPERIMENT STATION, GEORGE M. JEMISON, Director, 347 Forest Bldg., P. O. Box 245, Berkeley 1, Calif.

CENTRAL STATES FOREST EXPERIMENT STATION, WM. G. McGINNIES, Director, 111 Old Federal Bldg., Columbus 15, Ohio.

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION, REED W. BAILEY, Director, F. S. Bldg., 25th and Adams Sts., Ogden Utah.

LAKE STATES FOREST EXPERIMENT STATION, MURLYN B. DICKERMAN, Director, St. Paul Campus, University of Minnesota, St. Paul 1, Minn.

NORTHEASTERN FOREST EXPERIMENT STATION, RALPH W. MARQUIS, Director, 102 Motors Ave., Upper Darby, Pa.

PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION, ROBERT W. COWLIN, Director, 729 N. E. Oregon St., P. O. Box 4059, Portland 8, Ore.

ROCKY MOUNTAIN FOREST AND RANGE EXPERIMENT STATION, RAYMOND PRICE, Director, 221 Forestry Bldg., Colo. A. & M. College, Ft. Collins, Colo.

SOUTHEASTERN FOREST EXPERIMENT STATION, ELWOOD L. BEMMON, Director, 225 Federal Bldg., P. O. Box 2570, Asheville, N. C.

SOUTHERN FOREST EXPERIMENT STATION, P. A. BRIEGLEB, Director, 704 Lowich Bldg., 2026 St. Charles Ave., New Orleans 13, La.

FOREST PRODUCTS LAB. DR. J. ALFRED HALL, Director, North Walnut St., Madison 5, Wis.

ALBERTA DEPARTMENT OF LANDS & FORESTS, Edmonton, Alta.

BRITISH COLUMBIA FOREST SERVICE, Dept. of Lands & Forests, Victoria, B. C. C. D. ORCHARD, deputy minister.

FEDERAL DEPARTMENT OF AGRICULTURE, Forestry Branch, Ottawa. D. A. MACDONALD, director.

State Foresters or Comparable Officials

L. T. Webster	Washington	Olympia
Dwight L. Phipps	Oregon	Salem
Roger Guernsey	Idaho	801 Capitol Blvd., Boise
F. H. Raymond	California	Sacramento
Gareth C. Moon	Montana	Missoula
Carl Johnson	Wyoming	State Forester, Cheyenne, Wyo.
Everett J. Lee	Colorado	124 Capitol Bldg., Denver
J. Whitney Floyd (Chief Forester)	Utah	School of Forestry, Logan
Harry R. Woodward	South Dakota	Pierre
W. W. Lane (State Land Com.)	Arizona	Phoenix
E. S. Walker (Com. Public Lands)	New Mexico	Santa Fe

Bureau of Land Management

(O. & C. LANDS ADMINISTRATION)
Headquarters Office: 1001 N. E. Lloyd Blvd., Portland, Ore.
James F. Doyle, Area Administrator, Area 1

Bureau of Indian Affairs

Harold Weaver, Area Forester, Bureau of Indian Affairs
Portland, Ore. (covering Ore., Wash., Idaho)
1001 N. E. Lloyd Blvd., Portland, Ore.

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Peoria Malleable Iron Castings go into this Hyster Karry Krane — also Hyster Winches and Lift Trucks.

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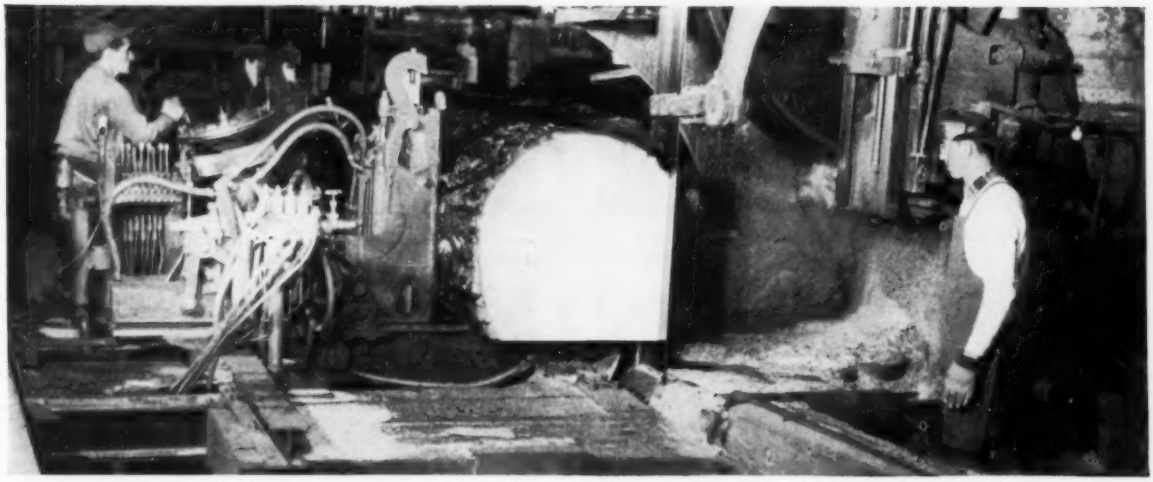
Standard Engineer's Field Report

Another new product development
CALOL INDUSTRIAL GREASE

New grease simplifies bearing lubrication, cuts bearing repacking time 75%



CALOL INDUSTRIAL GREASE, an entirely new grease made with a completely different synthetic thickener, has proved its outstanding qualities in all types of bearings and other greased points under toughest conditions in sawmills, on the show and in a wide variety of operations.

Willow Ranch Lumber Co., (see photo) Willow Ranch, Calif., always had to repack bearings weekly because of water entering lower band mill and resaw bearings. Packed with Calol Industrial Grease, bearings ran a full month without trouble. When inspected, both grease and bearings were in perfect condition and continued to operate without additional grease.

FREE FOLDER gives you complete information on New Calol Industrial Grease. Write or ask for it today.

FOR EXPERT HELP on lubrication or fuel problems, write or call your Standard Fuel and Lubricant Engineer or Representative, or write Standard Oil Company of California, 225 Bush St., San Francisco.

TRADEMARK "CALOL" REG. U. S. PAT. OFF.

NEW CALOL INDUSTRIAL GREASE is strong in all lubricating qualities, eliminates need for most specialized greases in your plant.

NEW CALOL INDUSTRIAL GREASE speeds greasing time, prevents errors, cuts down space and stock control trouble, won't change in storage.

Gives these outstanding advantages:

- Mixes with any grease...forms safe mixtures, eliminates bearing removal and cleaning when you change brands.
- Exceptionally high melting point of 500° F.+ ...thorough lubrication in extreme high-temperature operations.
- Extreme work stability...only slight softening after 1000-hour test that turns most greases to fluid in 4 to 20 hours.
- Excellent wear-prevention qualities . . . proved in service with steel-on-steel, steel-on-bronze, steel-on-babbitt bearings.
- Outstanding rust protection...in service or lay-up even in hot, moist conditions.
- Unusual water resistance...does not emulsify after more than a week in boiling water; conventional greases disintegrate after 4 min.
- Non-corrosive...will not corrode copper or any ferrous or non-ferrous metals.
- Pumpable over wide temp. range . . . Medium grade pumps through air dispensers at 3°F.

STANDARD OIL COMPANY OF CALIFORNIA

Equipment Review

Equipment Which Sped Up Production In 1955

IN THE FOLLOWING SEVEN PAGES THE LUMBERMAN presents a pictorial review of some of the new equipment which, in 1955, made jobs easier in logging, plywood plants and lumber mills.

This list is not complete because of space limitations. Nor is all the identification given in the accompanying brief descriptions. But the coverage is complete enough to demonstrate that improved technology is speeding up production and making a better product.

If you wish more details on any of the equipment shown, write to THE LUMBERMAN. We'll be glad to furnish additional data.

BIG TRACTORS took their place on the logger's production line in 1955. At left is Caterpillar D9 logging on Tillamook Burn, Ore., with "Cat" dozer, Hyster winch. Right, Allis-Chalmers HD-21, in Idaho, with Baker hydraulic dozer, winch; T-D torque conversion.

LE TOURNEAU ELECTRIC Log Stacker was one of several king-size lift truck-type carriers developed especially for log handling.

DECKING EIGHT-FOOT farmer logs at a Washington pulp mill with new Pettibone-Mulliken Cary-Lift, equipped with rubber tires.

IN SWEDEN, A NEW logging machine, Unimog Universal Tractor, self-loads, hauls, moves dirt, maintains roads and furnishes compressed air; equipped with 4-wheel drive, attachments, including trailers.

RIPPERS HAVE PROVED their value to loggers in road construction work. Here at work in Idaho show is the new hydraulic Ateco ripper mounted on the rear of a D-8 Caterpillar tractor.

MOBILE LINK-BELT Speeder (HC-98) with Berger air tongs loads logs in Oregon. It has Waukesha gas engine and a Cummins diesel.

SKIDDING LOGS to roadway ahead of loader with new R. G. LeTourneau electric arch, powered by Buda diesel, at Oregon show.

MODEL 17 HOMELITE chainsaw, equipped with limbing bar, removes limbs closely, eases production in Oregon plant's hydraulic barker.

PULPWOOD DREAM, mfd. by Taylor Machine Wks., is designed to load pulpwood across car. It travels wherever loaded truck is able to go.

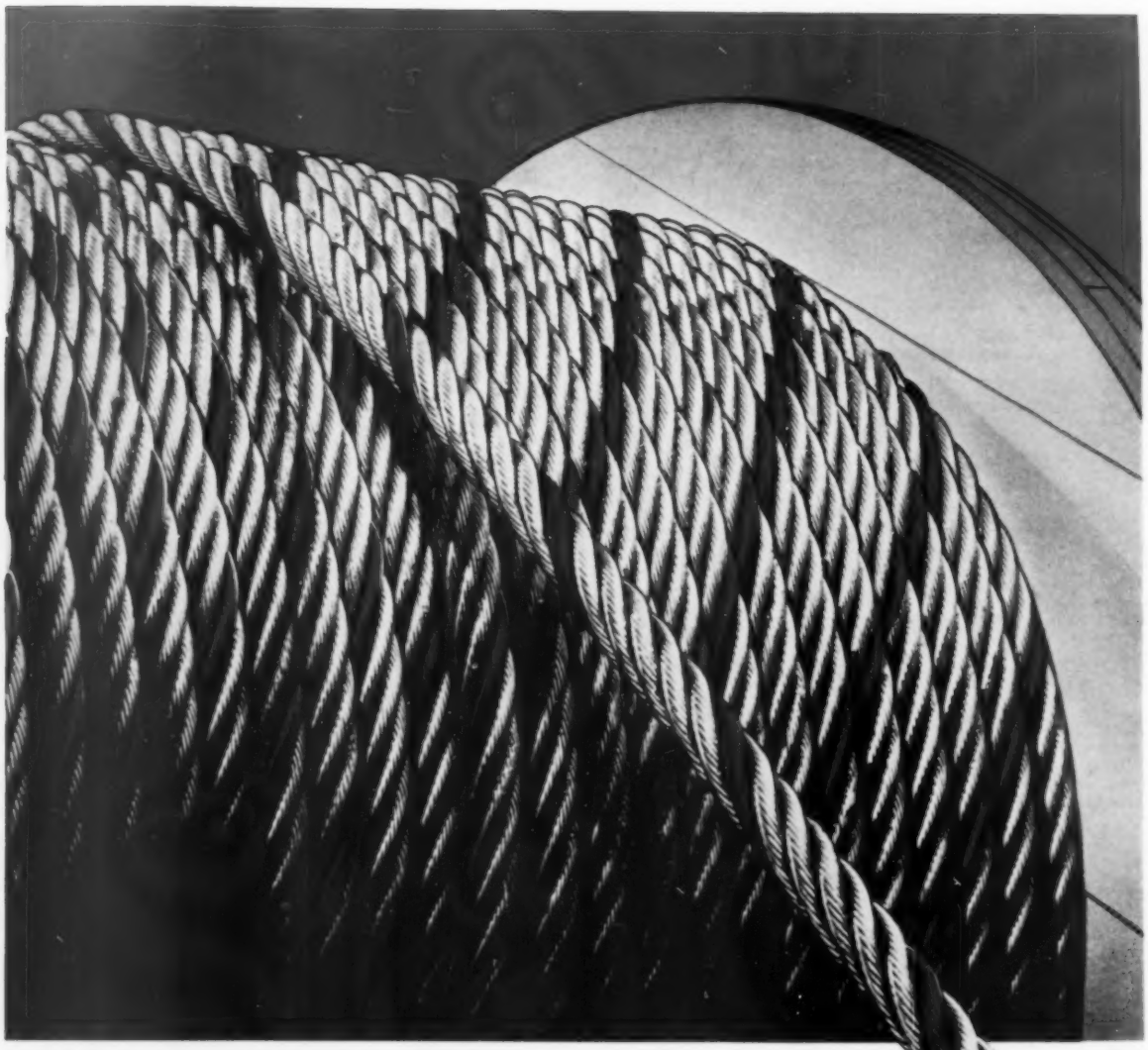
ONE MAN TREE HOG is used widely as a clearing and a felling tool. The saw can be turned vertically for use as a bucking tool.

SKIDDING LOGS WITH experimental model Caterpillar DW-20 5-wheel drive Goodyear rubber-tired tractor with Hyster-built arch unit mounted at rear. Machine here is at operations of J. I. Morgan, Inc., New Meadows, Idaho, one of several places it was tried along Pacific Coast.

"ELECTRALL" PORTABLE electric generator, developed by Intern. Harvester and Gen. Elec., weighs 325 lbs., has 12500 watt output.

CATERPILLAR'S COMPLETE new line of Traxcavators include, L. to R.: 50 hp., one cu. yd. capacity No. 933; 70 hp. 1½ cu. yd. capacity No. 955; 100 hp. 2¼ cu. yd. capacity No. 977.

HYSTER'S "WORLD'S largest" towing winch for Caterpillar D9 tractor, has 76M lb. pull.



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It costs no more.

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H. K. PORTER COMPANY, INC.
St. Louis 12, Missouri

IN OREGON OPERATION, Link-Belt K-370 Speeder mounted on special Pierce trailer has GM engine and also a torque converter.

NEWEST LOGGING TOOL of Le Tourneau-Westinghouse, is logging arch with electric drive assist, has 260-hp. engine, torque converter.

LE ROI NEW Tract-air unit has 42 hp. engine and makes use of air tools on the job practical. It has all control features of the conventional compressors. Large variety of attachments available.

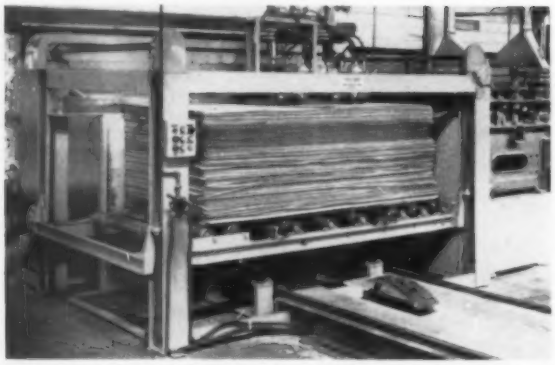
RUBBER TIRED SKIDDER, developed in B. C., which utilizes conventional DW10 and DW15 Caterpillar machines, with improvements.

PORTABLE SPAR TREES, like Berger Porta-Tower shown here in Oregon, are finding favor among loggers as an aid in mobility.

PORTABLE CHIPPER, mfd. by Fitchburg Eng. Corp., mounted on Caterpillar D7, disposes of slash right in the California woods.

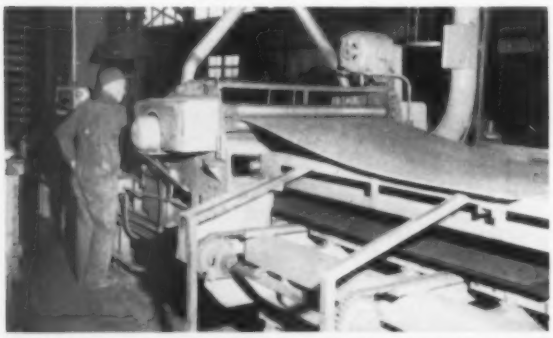
LEFT: STRAPPING LOGS on trucks gains favor and permits more log storage in ponds. Here is a Signode hand crimping tool converted to an air power operation. SHOWN ABOVE: An aid to southern pine logging has been this Ray-Lind self-loader. The operator sits on top of the cab and has all the controls at hand close by.

Equipment Review

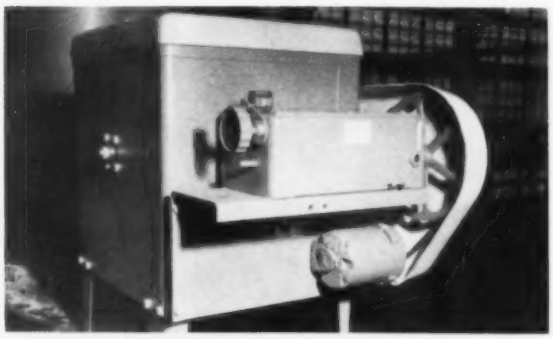


DURAND PLYWOOD PANEL feeder operation in B. C. has hydraulic mechanism and automatic controls, is attached to the skinner saw.

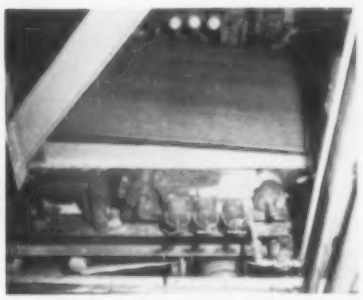
CHAIN SAWS MAKE core stock. Both Northwest Marine Iron Wks. (Blue Babe unit, above) and L-M Equipment Co. make the units.



HOME-MADE machine pre-trims edges of hardwood panel and metal-brushes back side at Oregon plant. Pacific Saw & Knife saws are used.

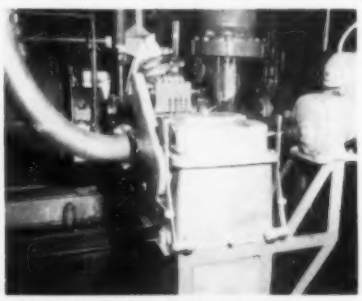


RESIN PROPORTIONING pump, mfd. by Omega Machine Co., is used in Oregon hardboard plant for accurate control and larger capacity.

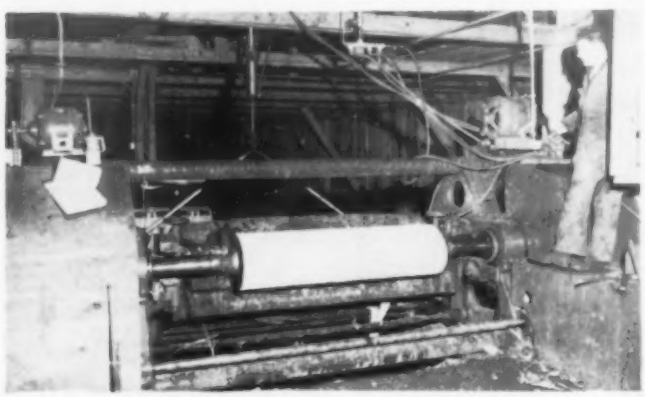


ROTABELT SUCTION unit at hardboard plant on Downington forming machine removes additional water from mat, reduces wire wear.

STAINLESS STEEL suction slice, mfd. by Monarch Forge & Machine Works, squeezes water from mat ahead of press roll.



ASPLUND RECIPROCATING valve units (fore.) with Asplund Defibrators (rear) give positive discharge control from first refiners.



SMALL DIAMETER PEELER blocks are converted into core veneer on a 48-inch swing Coe lathe with 72-inch knife which also does the barking. The knife starts cut in bark, finishes in the wood.

CUTTING TWO PEELER blocks simultaneously, with an electric-powered, air equipped pond saw that was built by the B & H Equipment Co. It is equipped with two chains, bars.

"Eucs" for logging operations

This Euclid S-7 Scraper is ideal for construction of access roads. It is powered by a 138 h.p. engine . . . makes non-stop turns in 26' for close quarter work . . . has a heaped capacity of 9 cu. yds. . . . 4 section reversible cutting blade . . . with easy accessibility of major components for servicing and maintenance.

Rear-Dump "Eucs" have capacities of 10 to 50 tons . . . with diesel engines of 125 to 600 h.p. . . . are available with standard gear transmissions or Torqmatic Drive . . . Euclid planetary drive axle . . . have loaded top speeds up to 36 m.p.h.

This "Euc" Log Hauler is powered by a 300 h.p. engine . . . has Torqmatic Drive with No-Spin differential . . . 18.00 x 25 tires on drive and trailer wheels . . . 14 ft. bunks and 60-ton capacity . . . hydraulic booster steering . . . top speed empty of 30 m.p.h.

cut road building and log hauling costs!

For building and maintaining haul roads Euclid Rear-Dumps, Bottom-Dumps and Scrapers have the rugged construction, large capacity and speed that get more work done at lowest cost. Because they're engineered and built expressly for off-the-highway service, "Eucs" have longer life with lower maintenance cost than "beefed up" highway trucks. They've earned their reputation for top performance on hundreds of the toughest jobs everywhere.

Designed for log hauling, the Model TD Euclid has 14 ft. bunks and 60-ton capacity. It uses the same major components that have made "Eucs" the accepted standard for years on mine, quarry and construction work. The 18.00 x 25 tires have 15% more capacity than the 12.00 x 24 tires usually found on tandem axle trucks—their larger rolling radius and ground contact area give better traction on soft roads. Simplicity of drive components results in easier servicing and lower maintenance cost.

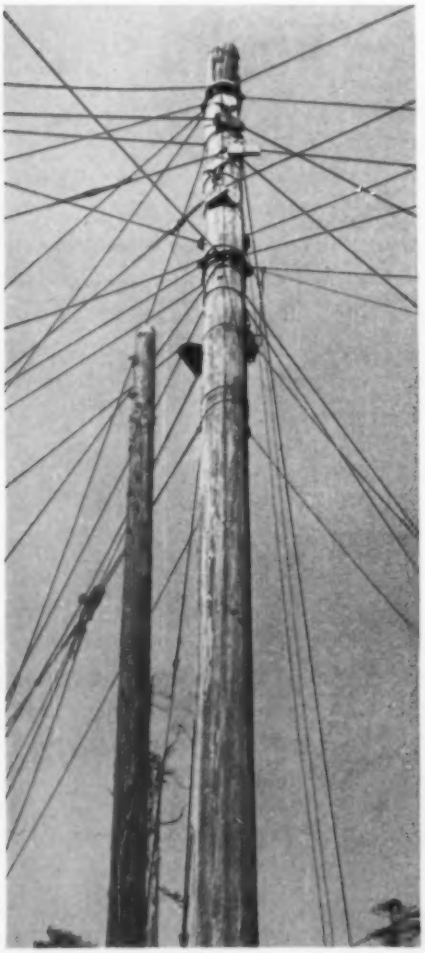
Get information on the complete Euclid line from your nearby dealer or write direct . . . today!

EUCLID DIVISION GENERAL MOTORS CORPORATION, Cleveland 17, Ohio

Euclid Equipment

FOR LOGGING, CONSTRUCTION AND MINING

Punishing equipment jobs need wire rope that can really take it. MONARCH WHYTE STRAND is made by Macwhyte in the correct size and type designed to give you outstanding service in toughest going.



Easy to handle because it's properly PREformed, MONARCH WHYTE STRAND gives you maximum service—each rope is Internally Lubricated according to use.

This rope has what it takes for logging!

Whether you need choker rope, haulback line, sky line, load binder rope . . . any logging rope at all, there is a MONARCH WHYTE STRAND rope, made by Macwhyte, for long hard service.

These ropes are properly designed and constructed for your equipment—PREformed for flexibility, and correctly lubricated for outstanding service in each logging operation.

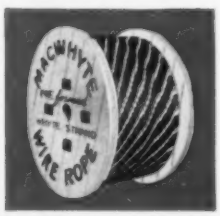
Macwhyte logging ropes are stocked for immediate delivery.

Ask for free bulletin #5434 listing recommendations of the correct rope for each logging need.

MACWHYTE LOGGING ROPES

Macwhyte Company, 2954 Fourteenth Avenue, Kenosha, Wisconsin

Manufacturers of: Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope, and Wire Rope Assemblies. Special catalogs available.



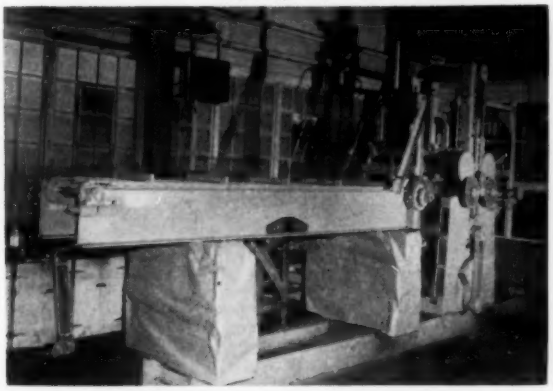
MILL DEPOTS:
Portland 9, 1603 N. W. 14th Ave., Ph: BRoadway 1661
Seattle 4, 87 Holgate Street, Ph: MAin 1715
San Francisco 7, 188 King Street, Ph: EXbrook 2-4966
Los Angeles 21, 2035 Sacramento St., Ph: Trinity 8383

Whenever you use wire rope—whether it's tractor arch line, choker rope, load binder rope, you'll find MONARCH WHYTE STRAND, made by Macwhyte, properly designed for best service!

FOR LOGGING, CONSTRUCTION AND MINING

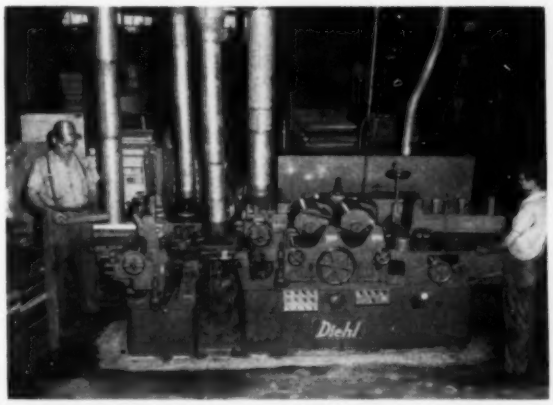
Equipment Review

ONE OF NEWER portable sawmills is the Bachmobile in British Columbia. It has headrig, one-man carriage with clutch friction feed, saw edger, power unit, live roller conveyor and blower. Edger cuts in opposite direction to headrig. Rig is four-wheel mounted.

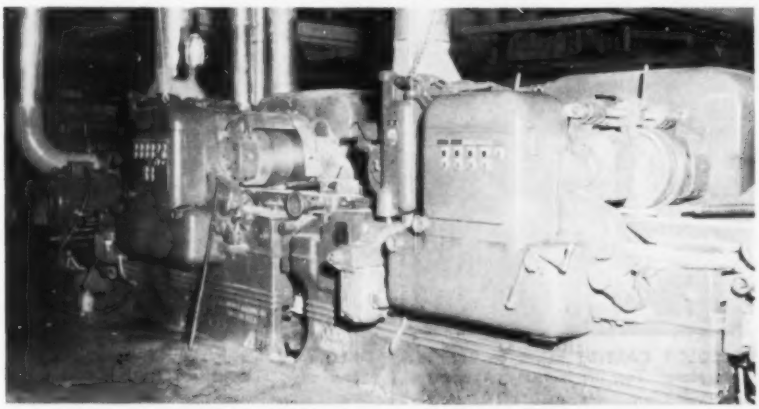


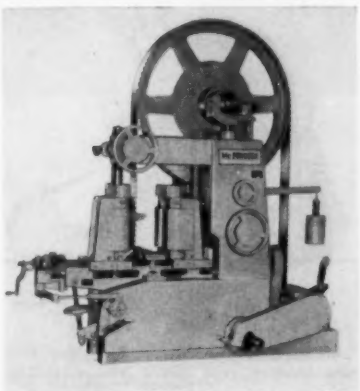
NEW TYPE of infeed drive developed by Dominion Bridge Co., Ltd., for stud mills cutting 8-ft. logs, plywood cores or cants into studs. Drive can be extended to handle 16-20 foot lengths, which makes it very flexible unit, with Dominion Premier gang saw.

MATER RIDERLESS CARRIAGE has sawyer control, dogging and setting by means of push buttons. Recent installations show riderless carriages increase productivity in large mills (100M bf/day).

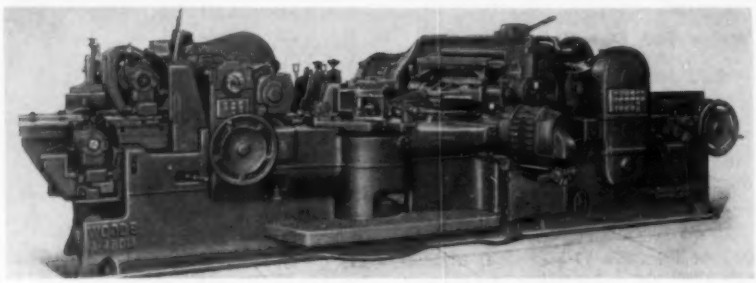


FOUR NEW MACHINES have been introduced by G. M. Diehl Mach. Wks. They are the new 6 and 8-in. Moulder, the 12-in. Moulder (above) and the #99 and #990 multi-rip saws. Many new features.





COMPLETELY NEW, the McDonough 54-inch vertical resaw (above) has massive box type saw guide arm. Also has Timken bearings, flexible feed wks., streamlined column casting.

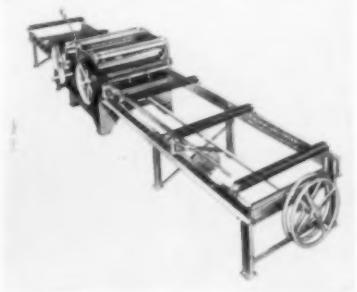


TWO NEW S. A. Woods machines. In top left photo is Model 469 blanker (right) discharging to Woods 409M 16-knife, 4-head planer-matcher for four-side surfacing, at J. Neils Lumber Co., Klickitat, Wash. In bottom left photo is A-480M diagonal planer and matcher, which eliminates sniped ends.

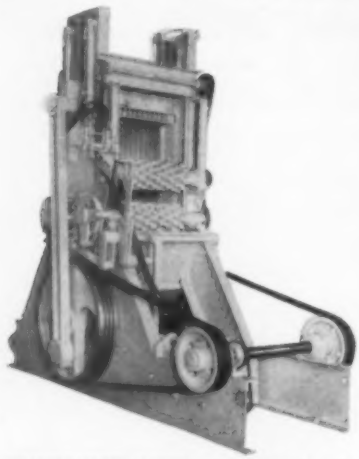
Equipment Review

THE PACIFIC COAST COMPANY, Willits, California, installed new equipment in 1955. At left: 10 x 72-inch edger built by Industrial Machine Works, Ukiah, Calif., is used both as edger and a gang saw. It weighs 11 tons, has six Disston 32-inch, 5-gauge saws, which are set electrically. Feed from 40 to 426 lineal fpm. O-ring seals on Dodge-Timken bearings, which are outside of the machine. Right: three Gardner-Denver 600 cu. ft. compressors in line, each with a 125 hp. built-in motor, furnish air for the mill.

PREFABRICATED DRY KILN at Klamath Falls, Ore., designed by Rees Blowpipe Co., has galvanized bolted panels, overhead line shaft with 7 fans (L.) and exhaust fan at other end (R).



WHELAND CO. introduced E-42 4x42" ball bearing edger (above). Other units: automatic rear edger table, 7 and 8-foot band mills, elec. shift trimmer, low mill air nigger.



GANGMASTER GANG saw, B. C., has portable features, feed driven from crankshaft.

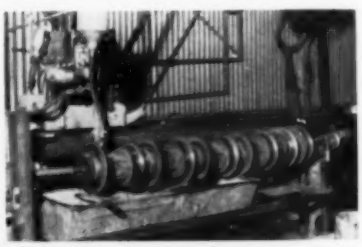
CARBOLOY CARBIDE knives on Buss Machine planer. Tool life increased, economical.

KENWORTH 803 2-axle dump with twenty-four cubic yard capacity and 12-foot width.

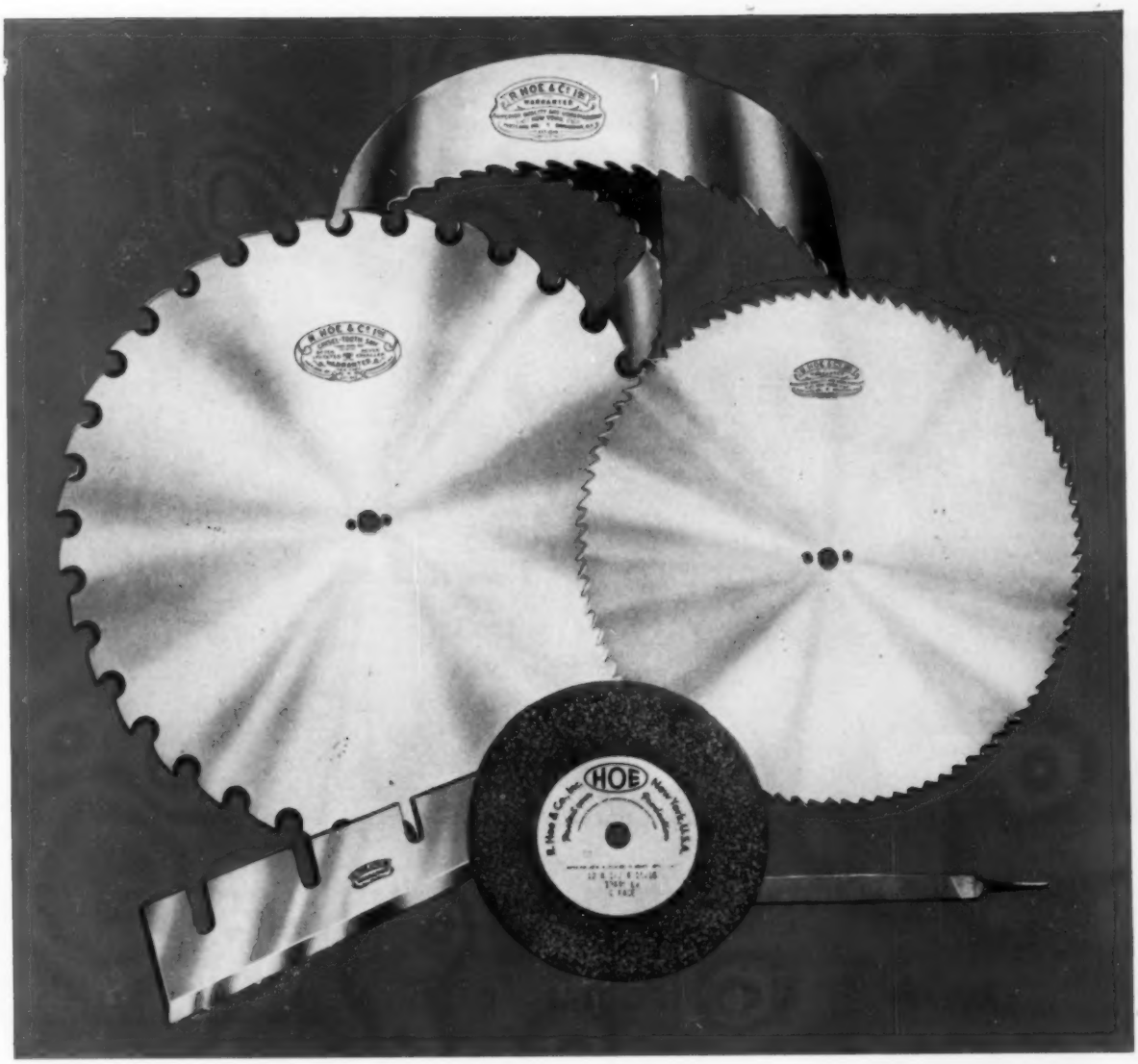
◀ OHIOLITE MODEL 55 hoist (left) is aluminum alloy; also is heavy-duty, non-sparking.

Write For Details

• Full details on any of the products illustrated in the preceding pages can be obtained by writing THE LUMBERMAN. Equipment shown is commercially available as standard production items.



TRACTOR ROLLERS are rebuilt by automatic welding process with Stoody Auto. Wire 105.



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SOLID TOOTH SAWS

BITS and SHANKS

CARBIDE
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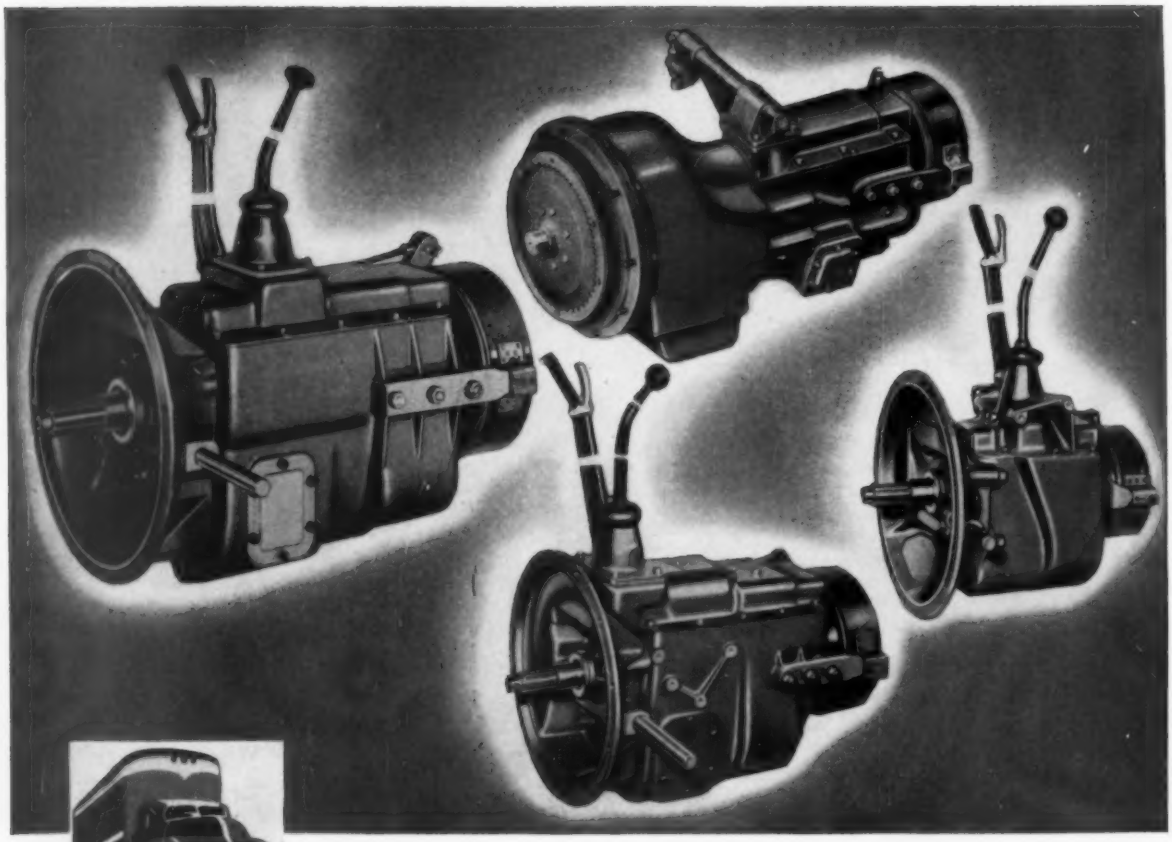
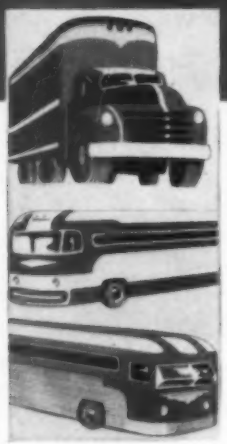




POWER TRANSMISSION?

start from scratch . . . WITH CLARK

It's a far cry to days when a transmission was an individual component—a set of gear ratios in a box.

Today it's a vital member of a power-transmission team, engineered to perform a specific assignment in a vehicle that works for somebody's living: a highway hauler, a bus, or an off-highway machine.

Talk to Clark.

Have you a new model in the drafting stage?—or an existing one in need of face-lifting? Clark either has a unit to meet your need, or can design one—from transmission to complete power train.

Here is a full half-century of operating experience in that vital area *from engine flywheel to point of torque application.* That fund of knowledge is yours to command.

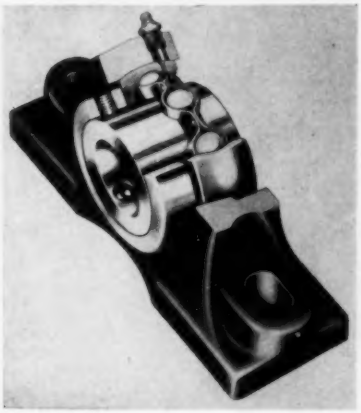
Talk to Clark. A handy-sized booklet tells what products Clark manufactures; explains, also, why many leading vehicle builders call it "good business" to do business with

CLARK®
EQUIPMENT

CLARK EQUIPMENT COMPANY
TRANSMISSION DIVISION
JACKSON 8, MICHIGAN

Equipment Review

R. G. LETOURNEAU's prototype electric logging crane, with all-electric controls, had its initial tryout at MacMillan & Bloedel's Sproat Lake, B. C., division. Machine weighs 70M lbs., crane handles 12½ ton lifts at twenty feet with its welded steel cantilever type boom.

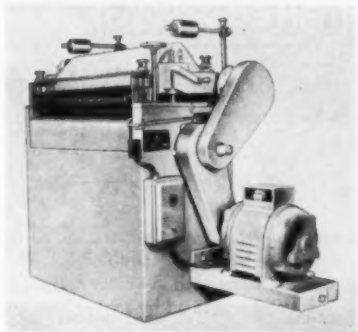


DODGE MFG. CORP. has added a new series of ball bearings designed for medium duty service to its 30,000 hour line. They are designated Dodge SCM, and compare to SC line.

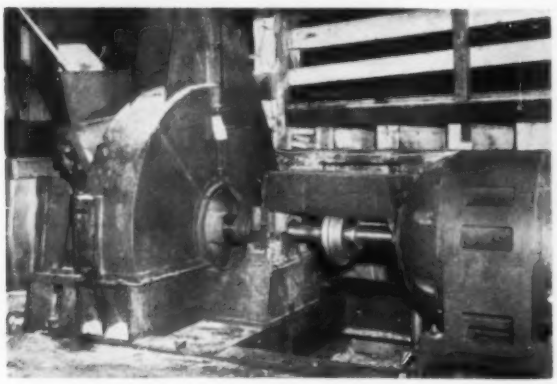
MICHIGAN 175 lift truck, mfd. by Clark Eqpt. Co., has heavy-duty boom, forks and hydraulically operated log push-off carriage custom made for unit. Rated lift capac. 38M lbs., can handle 16-ft. redwood logs, up to 83-in. diameter. Unit replaces skyline system and three men.

ALLIS-CHALMERS TW-360 scraper has speed range from 3 to 20 mph. It weighs 47,000 lbs., and is powered by A-C 280 hp. diesel engine.

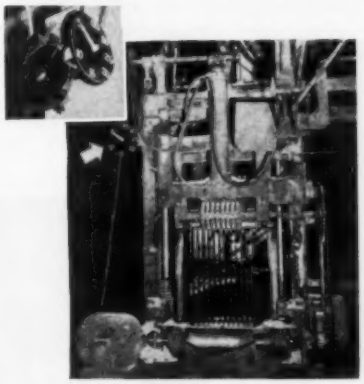
GERLINGER RM-20-6687 material carrier in operation at Hammond Lbr. Co., Calif. Unit was specially engineered to take redwood package sizes for yard drying 82" wide x 54" high. Special 18-ft. long flared load shoes support ends of long package. Carrier is 20M lb. unit, powered with J. G. 130 hp. Ford Ind. engine.

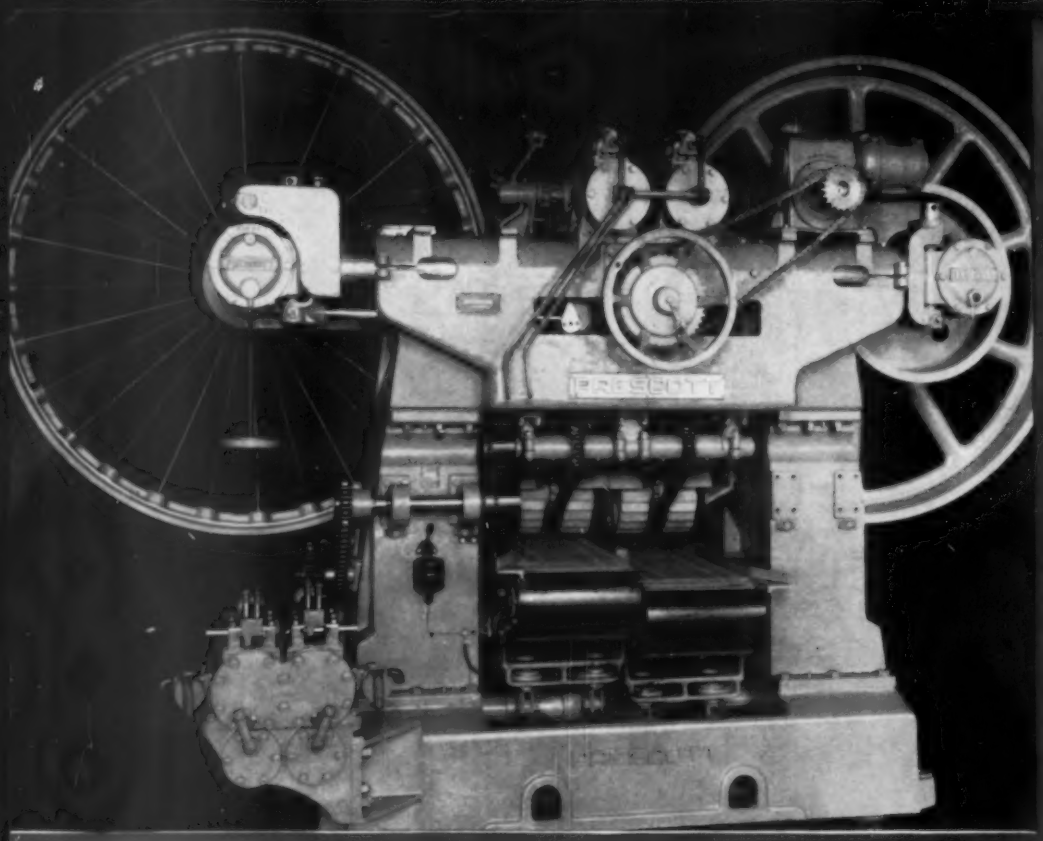


ABOVE: TIMESAVER, Inc., new belt automatic feed Speedsander sands patched plywood panels from 40-80 fpm. BELOW: Mill Eng. & Supp. Co. elec.-controlled Automatic Overhang adaptable to Sunbo, Super Gangsaws to saw any-size logs or cants without resetting.



MURCO - MURRAY 64" 12-knife chipper, driven by a 150 hp. Gen. Elec. motor, is driven directly by a shaft. It is in operation at Hallack & Howard Lbr. Co. at Winchester, Idaho. The Chipper has fan discharge into surge bin, and also is equipped with prewired electrical and control by Industrial Components, Inc.





• HORIZONTAL AND VERTICAL RESAWS — complete range of sizes — 5-6-7 and 8 foot. Precision accuracy — minimum kerf waste.

PRESCOTT

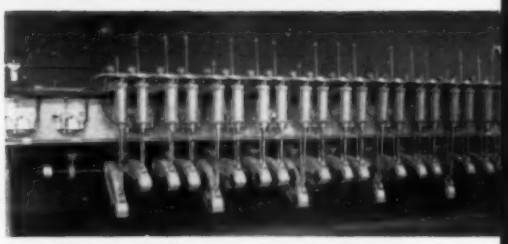
. . 87 years of Sawmill Progress

"PRESCOTT" has been a hallmark of quality and progress in sawmill machinery since 1868. These years of widely diversified experience combined with outstanding engineering and manufacturing skills have resulted in our present complete line of high efficiency sawmill machinery.

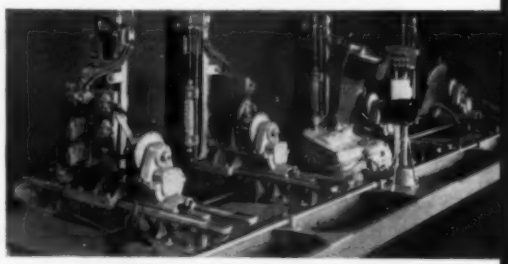
Modern in every detail — retaining all the superior, service-proved basic Prescott features — Prescott Sawmill Machinery offers you the most effective way to cut manpower costs — to get more saleable material from each log — and to reduce operating overhead by longer service life and less maintenance per machine.

Skillful integration of all units into a smoothly operating mill is as important to consistent profits as fine machinery. Whether you are planning a new mill, expansion or modernization, Prescott's overall experience can provide valuable assistance.

Let us show you why Prescott is uniquely qualified to supply you with the finest and most modern heavy-duty sawmill machinery. Call, wire or write for literature or the services of a direct factory representative.



• TRIMMERS AND EDGERS . . . sizes and types for large and small mills.



• CARRIAGES . . . rack and pinion and screw block. Medium, standard and heavy duty.

For Profitable Sawmill Operation. . **SPECIFY**

PRESCOTT

THE PRESCOTT COMPANY, *Menominee, Michigan*

HIGH EFFICIENCY, HEAVY-DUTY SAWMILL MACHINERY

SETWORKS
Manual and power — Trout, air, steam and electric. For all sizes and makes of rack and pinion and screw block carriages.

B.F.Goodrich

Washington logger gets up to 50,000 miles from original tread of Rock Logger tires

J. C. Miller hauls pulpwood in the logging areas around Quinault, Washington. His trucks roll over rocky dirt roads as well as paved highways. In this rugged work, B. F. Goodrich Rock Logger tires have given as many as 50,000 miles on the original tread, far more than other makes of tires.

Service like this is not unusual for B. F. Goodrich Rock Logger tires (below). The specially-compounded tread defies rock cuts and bruises. Husky, non-directional cleats take a firm grip on the road, guard against dangerous slippage.

All-Nylon body

B. F. Goodrich Rock Logger tires are built with an *all-nylon* cord body. Nylon is stronger than ordinary cord materials, withstands double the impact and resists heat blowouts and flex breaks. The *all-nylon* Rock Logger body outwears even the extra-thick tread, *can still be recapped over and over!*

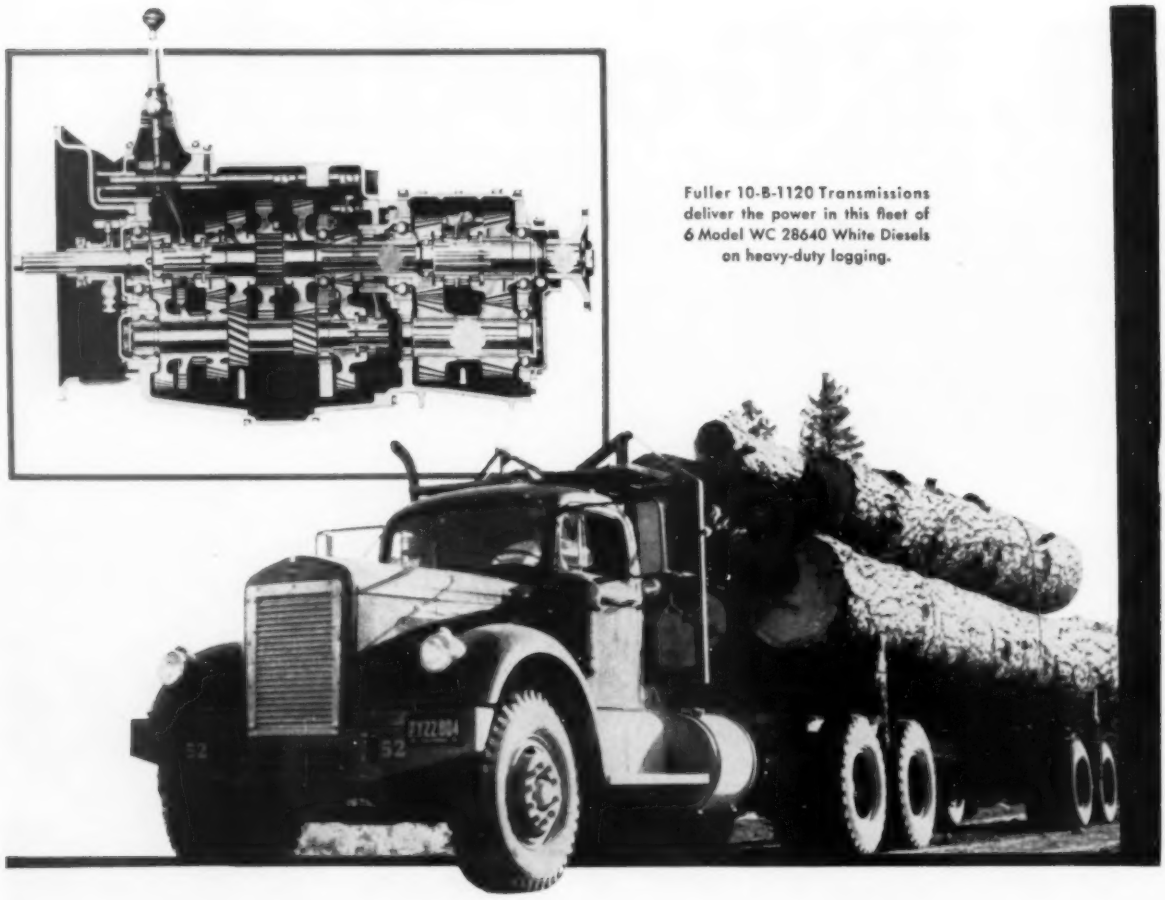
There's a money-saving *all-nylon* B. F. Goodrich tire for your logging work (some BFG tires available at lower prices). See your B. F. Goodrich retailer today. You'll find his address listed under Tires in the Yellow Pages of your phone book. Or write: *The B. F. Goodrich Company, Tire & Equipment Division, Akron 18, Ohio.*

J. C. MILLER examines the thick tread of a B. F. Goodrich Rock Logger tire that has already traveled 20,000 miles. Tire is built with nylon shock shield for extra mileage.

CLARENCE BALLER of Moclips, Wash., gets 4,000 hours of service and 2 recaps from BFG Rock Logger tires. His trucks haul 50-ton loads over gravel and shale roads.

Specify B. F. Goodrich tires when ordering new equipment.

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER



Fuller 10-B-1120 Transmissions deliver the power in this fleet of 6 Model WC 28640 White Diesels on heavy-duty logging.

FULLER 10-speed Transmissions keep logs rolling for Lindgren & Burrell

President and General Manager Alvin Lindgren, Lindgren & Burrell, Inc., contract loggers of Alturas, California, says of his 6 new Model WC 28640 White logging trucks equipped with Fuller 10-B-1120 Transmissions: "We are mighty proud of our Fuller gear box set-up . . . these Whites have been doing a swell job for us."

That "swell job" involves hauling loads of over 6000 board feet in logs through tough off-highway areas and over 33 to 39 miles one way on dusty dirt and gravel roads from cutting sides to the Alturas mill.

Where loads are heavy, grades steep, stress of constant shifting and heavy loading severe . . . . wherever the "going's tough"—specify Fuller Transmissions to deliver high torque, with the *right* gear ratios. Bring in your logs faster . . . at lower cost!

where horsepower *really* goes to work

Fuller TRANSMISSIONS

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO, MICHIGAN

Unit Drop Forge Div., Milwaukee 1, Wis. • Shuler Axle Co., Louisville, Ky. (Subsidiary) • Sales & Service, All Products, West. Dist. Branch, Oakland 6, Cal. and Southwest Dist. Office, Tulsa 3, Okla.

what's new?

END-SURFACING

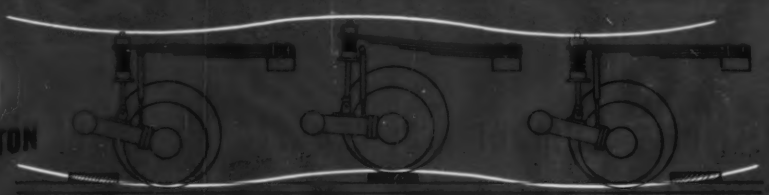
and only IRVINGTON can offer it!

BECAUSE: Exclusive patented suspension and control features of the "Floating Wheel" design produce cleaner, smoother End-Surfacing.

BECAUSE: Only Irvington End-Surfacers employ rugged, overstrength frame construction; precision chain; precision arbors—perfectly balanced; hydraulic shock absorbers; lightweight, high-strength metals. *Every* part designed to give *you* better appearing lumber. *This is End-Surfacing!*

CRADLE SUSPENSION

EXCLUSIVE WITH IRVINGTON



From chariots to luxurious motor cars, the wheel is basic for speed and smooth operation. Only Irvington "wheel-type" End-Surfacers combine the wheel with a "years-ahead" cradle-suspension system to bring those same qualities to your planing mill production.

Only Irvington manufactures a line of *integrated machines* for COMPLETE End-Conditioning.

IRVINGTON 66
Random Length END-SURFACER that puts power and production on the same arbor.

IRVINGTON 43-A
Random Length END-SURFACER with or without individual saw control.

IRVINGTON 26-A
(air-operated) 26-M (electrically-operated) CUT-OFF SAWS for fast defect and "upgrade" trimming.

IRVINGTON 61 END-PRINTER
for automatic, deep impression, single or double End-Printing and (optional) Waxing.

Irvington
MACHINE WORKS

Since 1907

1806 N.E. 7th Ave., Portland 12, Oregon
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This Lima Type 54-T truck mounted log loader with 52' pipe boom is loading logs near Rexford, Montana. It's the latest addition to J. Neils Lumber Company's fleet of 13 Limas.

J. Neils Lumber Co. reports . . . "Our 13 LIMAS give us fast, low-cost log handling on even the toughest jobs!"

"We bought our first Lima log loader back in 1946," reports J. Neils Lumber Company, Libby, Montana. "We liked the way it handled our toughest jobs smoothly and without excessive downtime—for fast, safe log handling at low cost. Since then we've purchased 12 more Limas.

"Our fleet of Limas now includes crawler mounted shovels as well as crawler and truck mounted cranes. We use them for all kinds of jobs, from log loading to gravelling, crusher loading, building erection and general materials handling. Working eight hours a day, six days a week, they're often subjected to extremely difficult operating conditions on every type of terrain and footing. No matter how tough the job, these rugged machines get it done fast. Best of all, maintenance has been average for this type of equipment."

Like J. Neils Lumber Company, *you* can depend on Lima for continuous, trouble-free operation on your log handling, digging and lifting jobs. There's a Lima engineered for your specific job requirements . . . shovels from ½ to 6 yards and cranes to 110 tons, draglines variable, with smaller capacities available on truck or wagon mounts. Get complete details from your nearby Lima distributor, or write Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Lima, Ohio.

BALDWIN BLH LIMA-HAMILTON

LIMA SHOVELS · CRANES · DRAGLINES · PULLSHOVELS

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Feenaughty Machinery Company
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Portland 14, Oregon

Modern Machinery Co., Inc.
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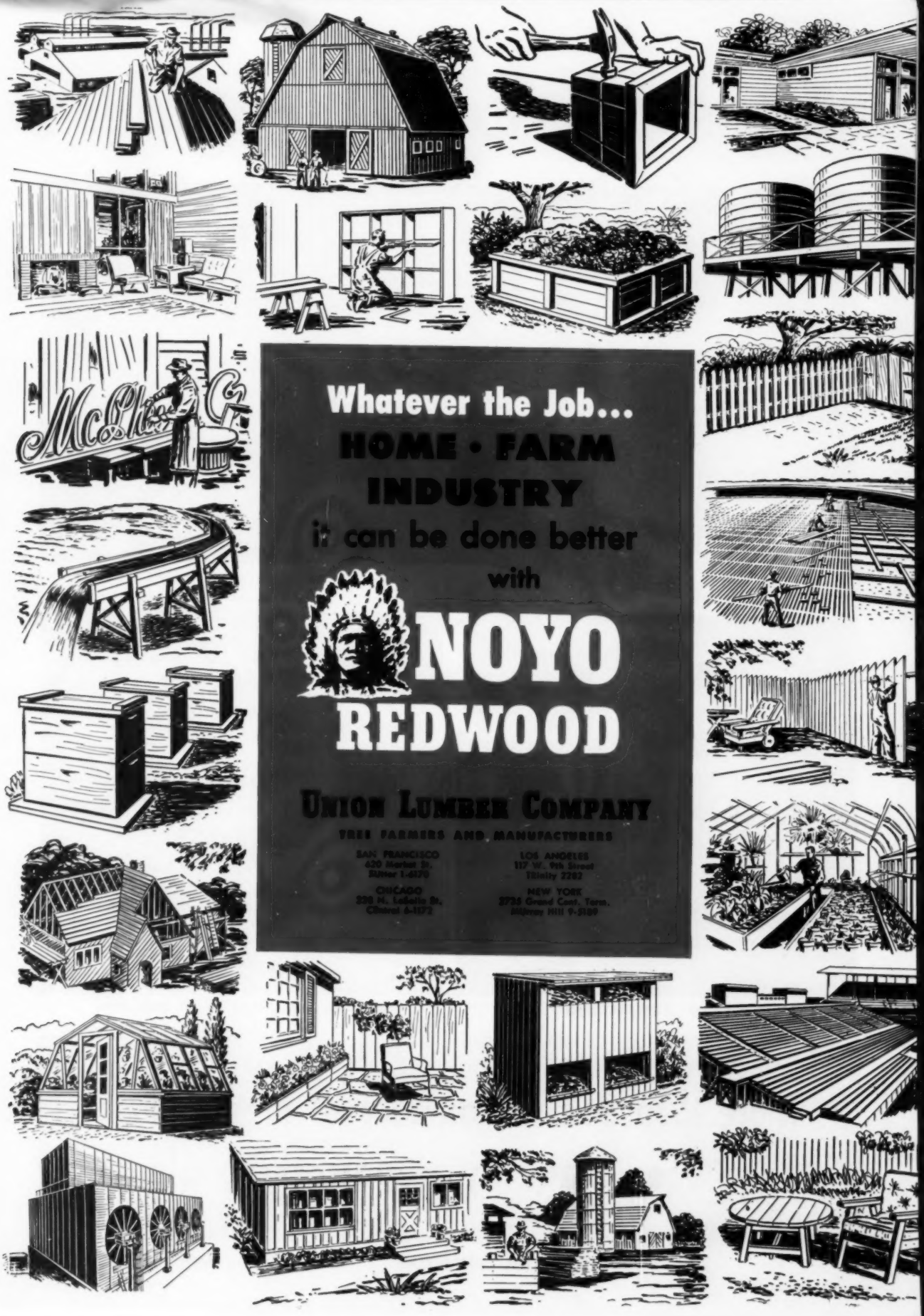
Seattle, Washington

Modern Machinery Co., Inc.
4412 Trent Ave.
Spokane 2, Washington

Cascade Industrial Supply
Highway 99, So.
Redding, California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it can be done better
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CHICAGO
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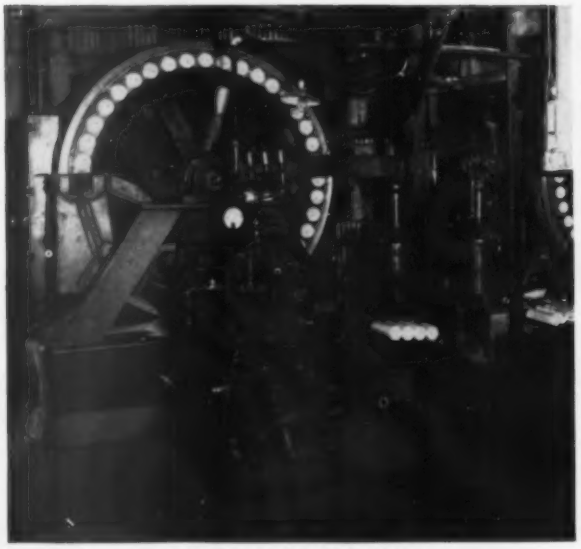
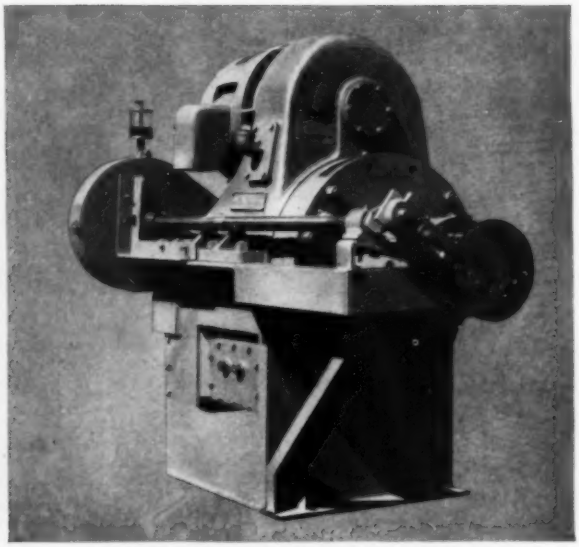
Central 6-1172
NEW YORK
2735 Grand Cent. Term.
Murray Hill 9-5189

PRES-TO-LOGS Machines

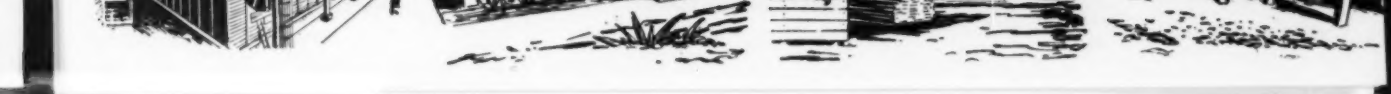


PRES-TO-LOGS MACHINE



PRES-TO-LOGS STOKER FUEL MACHINE

More than 3½ million tons of Pres-to-logs have been made by woodworking plants



turn WASTE into PROFIT for Progressive Manufacturers

WOOD WASTE can be converted profitably into Pres-to-logs, the finest of solid fuels. Two types of fuel can be made. One type is Pres-to-logs, for kitchen ranges, fireplaces, furnaces, water heaters and for industrial purposes. The other type is gravel-size Pres-to-logs stoker fuel for heating.

Leading woodworking plants in the United States and abroad transform dry sawdust and shavings into readily salable logs and stoker fuel with Pres-to-logs machines.

Both types of fuel are in strong demand because they contain no pitch, slivers, dirt or mess. Both are easy to handle and control. Both are long burning, with intense, even heat. There is almost no ash. No binder is used in either fuel—only compressed wood waste — which is ready for use immediately or can be stored for an indefinite period.

Operation of Pres-to-logs machines is easy, requires no special training or experience. Machines are built for long, trouble-free operation.

Pres-to-logs fuel manufacturers are protected by exclusive sales territories, and tested advertising and merchandising helps are available.

Catalogs Free Upon Request

Illustrated catalogs on Pres-to-logs machines and Pres-to-logs stoker fuel machines contain complete information, including uses, storage, construction and operation details of a complete installation, merchandising, sales and advertising helps and case histories of manufacturers and users. Fill in and mail the coupon. There is no obligation.

PRES-TO-LOGS INSTALLATIONS
(Log Machines)

Ashley Colter Ltd.	Fredericton, New Brunswick
British Columbia Forest Products, Ltd.	Victoria, B. C.
Caldwell Lumber & Box Co.	Caldwell, Idaho
Capitol Lumber Co.	Salem, Oregon
Co-Op Vegetable Oils, Ltd.	Altona, Manitoba
Cosopre, S. A.	Montevideo, Uruguay
Deer Park Pine Industry, Inc.	Deer Park, Washington
Empresa Agricola Chicama, Ltd.	Casa Grande, Peru
General Box Corp.	Retreat, South Africa
General Box Corp.	Parow, South Africa
Glenco Forest Products, Inc.	Sacramento, California
Great Lakes Lbr. & Shipping Ltd.	Fort William, Ontario
MacMillan & Bloedel, Ltd. (Red Band Div.)	Vancouver, B. C.
MacMillan & Bloedel, Ltd. (Van. Plywd. Div.)	Vancouver, B. C.
Miller Brothers Co.	Johnson City, Tennessee
Missoula Pres-to-logs Company	Missoula, Montana
J. Neils Lumber Co.	Libby, Montana
New Mexico Timber Company	Bernalillo, New Mexico
Nickey Brothers, Inc.	Memphis, Tennessee
Pacific Lumber Company	Scotia, California
Potlatch Forests, Inc.	Lewiston, Idaho
Potlatch Forests, Inc.	Potlatch, Idaho
Potlatch Forests, Inc.	Coeur d'Alene, Idaho
Pres-to-logs Distr. of California	Sacramento, California
Spokane Pres-to-logs Company	Spokane, Washington
Tehnopromet	Belgrade, Yugoslavia
Weyerhaeuser Timber Co.	Everett, Washington
Weyerhaeuser Timber Co.	Longview, Washington
Weyerhaeuser Timber Co.	Springfield, Oregon
Weyerhaeuser Timber Co.	Klamath Falls, Oregon
Weyerhaeuser Timber Co.	Newark, New Jersey
Reno Millwork, Inc.	Reno, Nevada

PRES-TO-LOGS INSTALLATIONS
(Stoker Fuel Machines)

Fred C. Christensen	Seattle, Washington
Deer Park Pine Industry	Deer Park, Washington
Fred Draper Lumber Co.	Colville, Washington
Gillespie & Co. of New York	Export to Japan
Haileybury Lumber Co.	Swastika, Ontario
MacMillan & Bloedel, Ltd. (Red Band Div.)	Vancouver, B. C.
Missoula Pres-to-logs Company	Missoula, Montana
J. Neils Lumber Co.	Libby, Montana
Nickey Brothers, Inc.	Memphis, Tennessee
Potlatch Forests, Inc.	Lewiston, Idaho
D. M. Simpson & Co.	Barbados, B. W. I.
Spokane Pres-to-logs Company	Spokane, Washington
E. Wagner & Son	Twisp, Washington

PRES-TO-LOGS

WOOD BRIQUETTES, INC.
LEWISTON, IDAHO

Send for Catalog

WOOD BRIQUETTES, INC., Lewiston, Idaho

☐ Please send Pres-to-logs machine catalog.
☐ Please send Pres-to-logs stoker fuel machine catalog.

Name_____

Address_____

City_____ Zone___ State_____

SKOOKUM PRODUCTS
MUST PASS
the 6 Point Verification Test!

TONGS and FORGINGS Must Pass:

- Timken Mill Analysis on Forging Steel
- Rockwell and other Tests for Proper Temper
- MPI Test before Repairing or Reshaping (*)

*Metal Particle Inspection for scientific detection of flaws in the alloy structure of metal.

All Blocks for Logging, Construction and Mining Must Meet These Requirements:

- Stress-Proof Steel in Axle Pins
- At least a 5-to-1 Safety Factor on Every Skookum Block!
- Work-Hardening, True Hadfield Manganese Steel Sheaves to eliminate Line-Wear.

The 6-Point Verification Test Assures You
SAFER LOGGING OPERATIONS!

Every Skookum product is the result of painstaking metallurgical research and test. Tougher, stronger steels are used — Skookum's intensive, engineering design program creates a stronger product that will last longer and return MORE SERVICE for every equipment dollar you spend! Use of proper bearings, size of sheaves, the correct metal and design of castings in all Skookum products guarantees the best equipment you can buy! Blocks • Fairleads • Tongs • Arch Hooks and Other Forgings.

SKOOKUM A-B-SERIES
- Bronze Bushed BLOCK
- Manganese steel sheaves.
- Lightweight

SKOOKUM #1010 HAULBACK BLOCK
- Timken Roller Bearings
- Lightweight Manganese steel sheaves.

SKOOKUM #R-10 RIG-UP BLOCK
- Timken Bearings.
- Manganese sheaves.
- Broad throat for passing knots and splices.

SKOOKUM
- Logging Tongs.
- Pine Logging Tongs.
- Skidding Tongs.
- Timber Handling Tongs.
- Special Tongs.
- Hand forged from best grade of tool steel.
- Heat treated. Shaped.

SKOOKUM SHACKLES forged from high grade alloy steel. Heat-treated. Carefully machined for true fit. All types and sizes.

SKOOKUM ARCH & TRACTOR HOOKS Forged from high grade alloy steel.

SKOOKUM Wide selection of FAIRLEADS for heelboom-ing, moving, other uses.

SKOOKUM WILL BUILD ANYTHING IN A BLOCK OR FORGING

WRITE TODAY for your catalog of the complete line of Skookum Blocks, Fairleads and Forgings.

The SKOOKUM-CO., Inc.
8524 N. CRAWFORD, PORTLAND, OREGON • 647 TERMINAL AVE., VANCOUVER, B. C.
U.S.A. CANADA

Two International TD-24-TC Crawler Tractors paving the way for new mountain road at Camp Pendleton, Calif. TD-24 offers International Torque Converter Drive as optional equipment, standardizing on Twin Disc Torque Converter Components.

6 profitable reasons why you need a *torque converter* in your crawler tractors

For higher work output . . . and *longer equipment life,* more and more contractors are ordering International TD-24 Torque Converter Crawler Tractors.

Torque converter drive offers *six profitable, proved* advantages applicable to *your* crawler tractors. 1. Three-stage design provides the highest engine output torque multiplication available — eliminating harmful, costly engine lugging and stalling. 2. Engines work up in the maximum efficiency range *all* the time, delivering *constant* high-horsepower output . . . doing *more work* than units equipped with mechanical drive. 3. Power is *automatically* matched to load demands, with gear-shifting minimized or eliminated — where mechanical transmissions must *stay* in the starting gear ratio, even after starting load resistance is reduced . . . operator efficiency is boosted. 4. Heavy load pick-up is smooth, even, without clutch slippage . . . better flotation is obtained. 5. Overloads, shock loads and vibrations are cushioned *out,* through *fluid* connection . . . providing longer tractor life with less maintenance. 6. Infinite variety of ratios are available to work with, permitting smooth, accurate control of loads and delicate "inching" under power.

Wherever earth and rock are moved, owners are using these six basic advantages *to convert their horsepower into more profits.* That's why International Harvester designed torque converter drive into the TD-24. They worked closely with Twin Disc Engineers, and have standardized on Twin Disc Torque Converter components.

Be sure there's a torque converter in *your* next TD-24! See your International Industrial Power Distributor, *today,* for information.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division) Rockford, Illinois

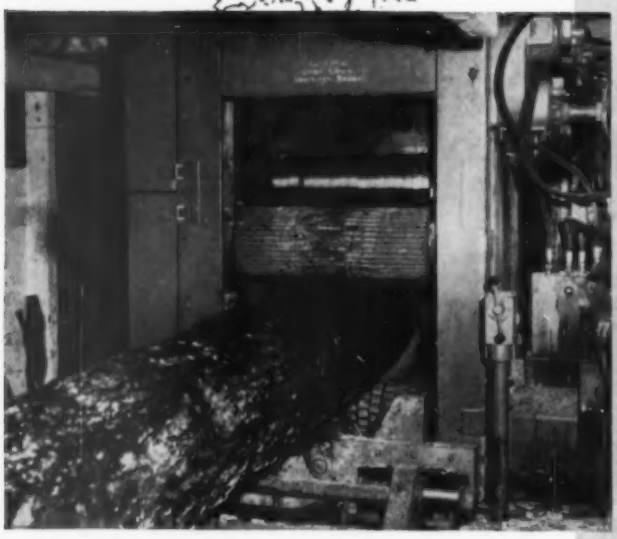
Is a gangsaw your answer?

Rising labor and timber costs are forcing many lumbermen to seek ways and means of reducing their cost per thousand.

In many instances, the answer lies in installation of a Linck Gangsaw by Corley.

Gebruder Linck (Linck Brothers) is a German manufacturer more than 100 years old. They have produced more than 10,000 gangsaws. Models imported by the Corley Manufacturing Company are designed for the American market and built to American standards.

If a gangsaw is the answer to your cost and production problems, then a Linck from Corley is the *best* answer. There is none better for years of fast, accurate service.



Corley, who has served lumbermen over the world for more than 50 years, is proud to present the Linck Gangsaw to American lumbermen... proud to be the distributor in the United States.

Let us help you find out if a Linck Gangsaw from Corley is your answer. Write, wire or 'phone us. We'll supply full details without obligation.

YOU'VE ASKED... HERE ARE THE FACTS

Q. Does a gangsaw cut truer lumber?
A. Absolutely. Every board is accurate and true. You can even tell the difference in the hum of your planer.
Q. Will a gangsaw increase my over-run?
A. Yes. With its 5/32" kerf a Linck Gangsaw makes even less sawdust than a bandsaw. And that isn't all. Since every board is accurate and true, you can allow less for planer waste, thus gaining in usable lumber from every log.
Q. Can I produce more lumber with fewer men?
A. Yes. Board footage per man is higher on a gangsaw than on any other type equipment.
Q. How much power does a gangsaw require?
A. That depends on the size installed. But regardless of size, a Linck will require far less horsepower per thousand b.f.m. than any circular saw or band mill.
Q. Should I saw logs or cants on a gangsaw?
A. Any model Linck can be equipped to cut either logs or cants, or both. The answer depends simply on which method better fits into your operation.
Q. How much will a Linck installation by Corley cost me?
A. That depends on your method of operation and on what you want to accomplish. An installation can be made for as little as $15,000. Larger set-ups run as high as six figures. Any one is a sure-fire investment which will return greater profit.
Q. Must I pay cash for my Linck Gangsaw?
A. No. Corley will arrange for any reputable lumberman to make a small down payment and pay the balance out of increased profits.
Q. Where can I see a Linck Gangsaw in operation?
A. Corley will be glad to tell you the location of the one nearest you.
Q. Can I get immediate delivery on a Linck Gangsaw?
A. That depends. Corley is allotted only a few machines each month. Your best bet is to get your order in now.

Corley

Corley Mills Cut Accurate Lumber

Manufacturing Co.

CHATTANOOGA, TENN.

DIRECT FACTORY BRANCHES: Little Rock, Ark. / Portland, Ore.

"FORD POWER really earns its keep on the BIG ONES!"

"I've operated Ford Industrial Engines in logging equipment for 17 years now. And not only do my newest Ford Engines handle the big loads with speed and ease, they do so with the same low cost that I've found to be characteristic of *all* Ford Engines."

—MR. W. S. VAN DE GRIFT
Van De Grift Logging Co., Concrete, Washington

Again, Ford is first choice where toughness counts

Mr. Van De Grift operates a Skagit SJ-4-RT Mobile Logger up in the rugged Cascade Mountain country of Washington. Powered by two Heavy Duty Ford Industrial Engines, this fast-working unit is equally efficient as a short-yarder or loader. And it's right at home in the big timber areas of the coast as well as in dense pine and other forest areas.

You'll see Ford Power making short work of tough logging jobs everywhere. And with good reason! For only Ford offers the lumber industry a *full line* of modern overhead-valve 4-, 6- and 8-cylinder industrial engines. And this includes a new super-efficient 4-cylinder diesel that has the same rigid deep-block construction you'll find in *all* Ford Engines.

Also, you'll find that in gasoline engines, Ford alone gives you Short Stroke design throughout the line. With Short Stroke design friction is cut, engine wear is reduced and you get more *working* power from every drop of fuel.

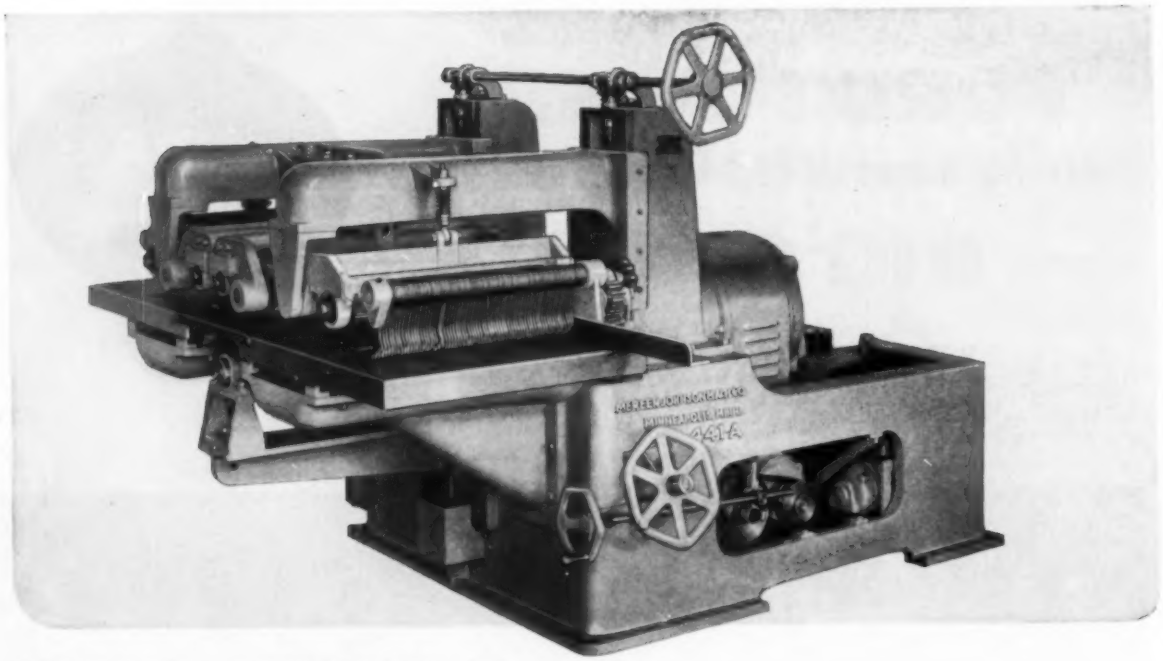
These features, plus a host of other exclusive engineering advancements, combine to give Ford Industrial Engines their ability to deliver peak performance with low, low operating costs . . . their stamina to stand up longer under rugged daily poundings.

Why not specify Ford for *your* new equipment . . . you, too, will find that Ford Power earns its keep!

And, to better serve industrial power users, a network of newly-appointed Ford Industrial Products Dealers has been set up across the nation. Now there is a Ford Industrial Power Headquarters in *your* area.

Ford
INDUSTRIAL ENGINES AND POWER UNITS

Phone or write for complete information:
INDUSTRIAL ENGINE DEPT.
FORD Division of FORD MOTOR COMPANY
P. O. BOX 598, DEARBORN, MICH.



MEREEN-JOHNSON NO. 441A

extra heavy duty GANG RIP SAW

MEREEN-JOHNSON has manufactured gang rip saws for 40 years. Power, speed and accuracy have always characterized M-J machines. This new No. 441A has all the features of previous models, with some important new ones added.

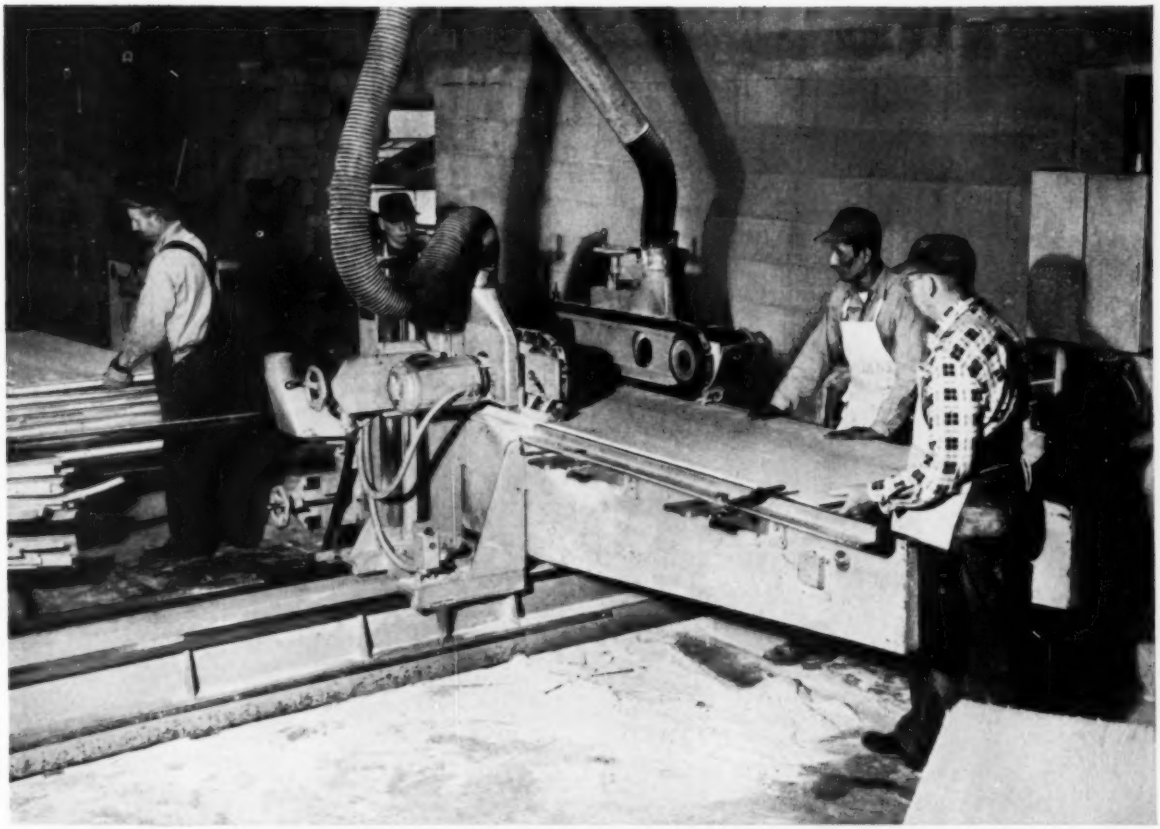
- Now *eight power-driven feed rolls*—two pair infeed and two outfeed. This is a double safeguard where utmost accuracy of production is required.
- 7200 RPM arbor speed puts extra power where it's needed.
- Vertical arbor adjustment simplifies bed plate removal.

If your production includes sheet materials, hardwood flooring, furniture core stock or wirebound boxes—it will pay you to investigate this big, rugged M-J No. 441A Rip Saw.

ONE-PIECE ARBOR BEAM

Exclusive with M-J is this beam mounting of motor, arbor and bearings in a single rigid unit.

Send For The No. 441A Bulletin



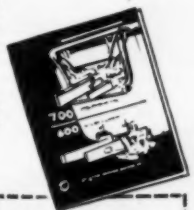
Lakeland Door Company, Trims Doors and Operating Costs with a Mereen-Johnson No. 600 DOUBLE CUT-OFF SAW

"We've realized big savings since our Mereen-Johnson No. 600 Double Cut-Off Saw was installed three years ago," according to B. A. Kennen, Superintendent of Lakeland Door Co., St. Louis Park, Minn. "Our production capacity is up over previous sawing methods and we now produce over 600 laminated wood doors—trimmed both directions—in an eight hour shift. If necessary, we could produce up to 1,000 finished pieces in the same time and still keep within the required close tolerances."

Quick set-up time is a feature of Mereen-Johnson equipment as provided by a patented snap dog arrangement that allows fast adjustments to be made for varying size doors with a minimum of downtime. Since most of Lakeland's work is "custom-tailored" for individual home contractors, sizes may vary as frequently as every five to ten doors trimmed. This requires fast adjustments to maintain scheduled production. "In a normal shift we may trim as many as 20 different size doors."

While the No. 600 is of medium size, it is well suited for this type of operation and it displays all the quality and workmanship of much larger units. The basic construction of the No. 600 is compact and allows for fast, easy adjustments. Maintenance is practically nothing!

The No. 600 Double Cut-Off Saw is available with trims only—or with tilting cope motors and stationary dado arbor. Special attachments are available as optional equipment.



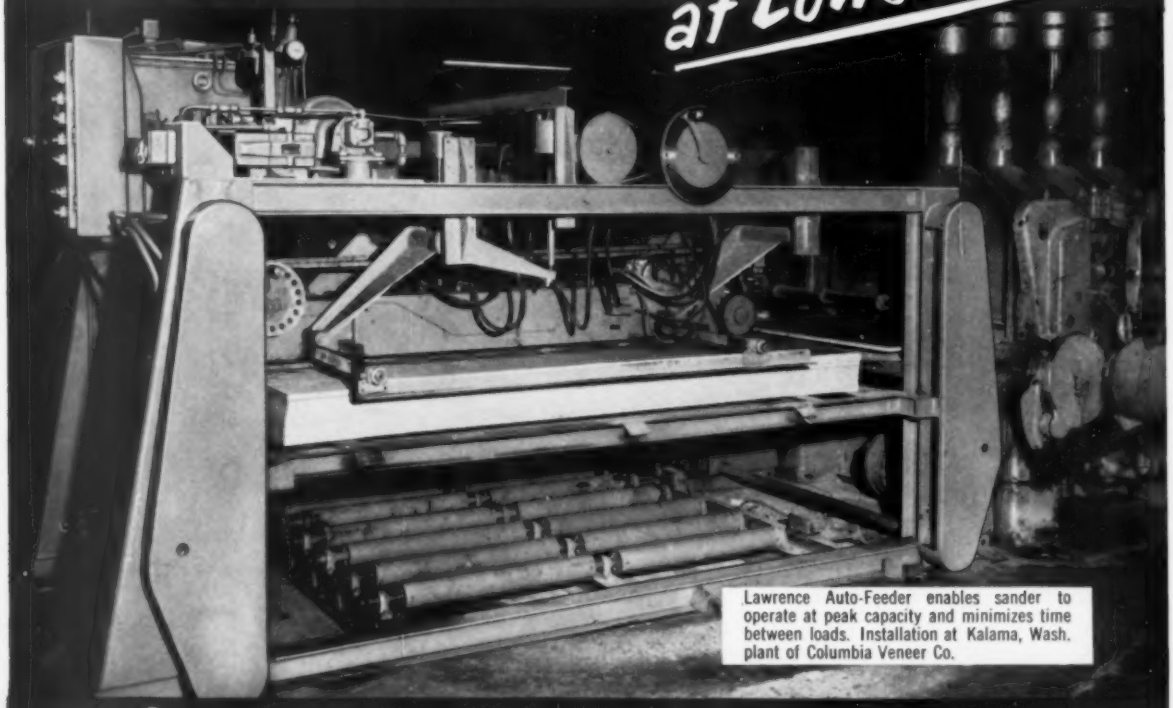
MEREEN-JOHNSON MACHINE CO.

4401 LYNDALE AVE. NO. • MINNEAPOLIS 12, MINNESOTA

CUT-OFF SAWS	DOUBLE CUT-OFF SAWS	MULTIPLE CUT-OFF SAWS	GANG RIP SAWS
TENONERS	VENEER & PLYWOOD SIZERS & JOINTERS		RESAWS

For complete specifications, write for illustrated Bulletin No. 600-700.

More PLYWOOD at Lower Cost



Lawrence Auto-Feeder enables sander to operate at peak capacity and minimizes time between loads. Installation at Kalama, Wash. plant of Columbia Veneer Co.

with LAWRENCE AUTO-FEEDER using VICKERS HYDRAULICS

Feed speed and crowding pressure are predetermined and easily adjustable . . . so that panels are butted just before entering sander.

Equipped with Vickers Hydraulics for lifting the packages of plywood and automatically squaring and feeding the individual panels into the sander, this Lawrence Auto-Feeder keeps plywood panels moving through the drum sander at top capacity.

This automatic feeder has also made substantial savings in feeding a skinner saw. It is equally applicable in particle and hardboard plants . . . in fact on any operation using automatic de-stacking and feeding.

The use of Vickers Hydraulics is growing rapidly in the logging, lumber and plywood industries because of these important advantages: high speed operation, exceptional versatility, built-in overload protection, flexibility of control, simplicity of installation, and low maintenance. For additional information about the many benefits you get from Vickers Hydraulics, write the nearest office. Write for Bulletin 55-67

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
ADMINISTRATIVE and ENGINEERING CENTER
Department 1550 • Detroit 32, Michigan

Atlanta Office
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West Coast Plant & Office
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COMPLETE POWER UNITS AND WAREHOUSE STOCKS AT EL SEGUNDO AND SEATTLE

7159

STANDARD VICKERS UNITS USED ON LAWRENCE AUTO-FEEDER

Vane Type Double Pump

Solenoid Controlled Pilot-Operated Four-Way Valve

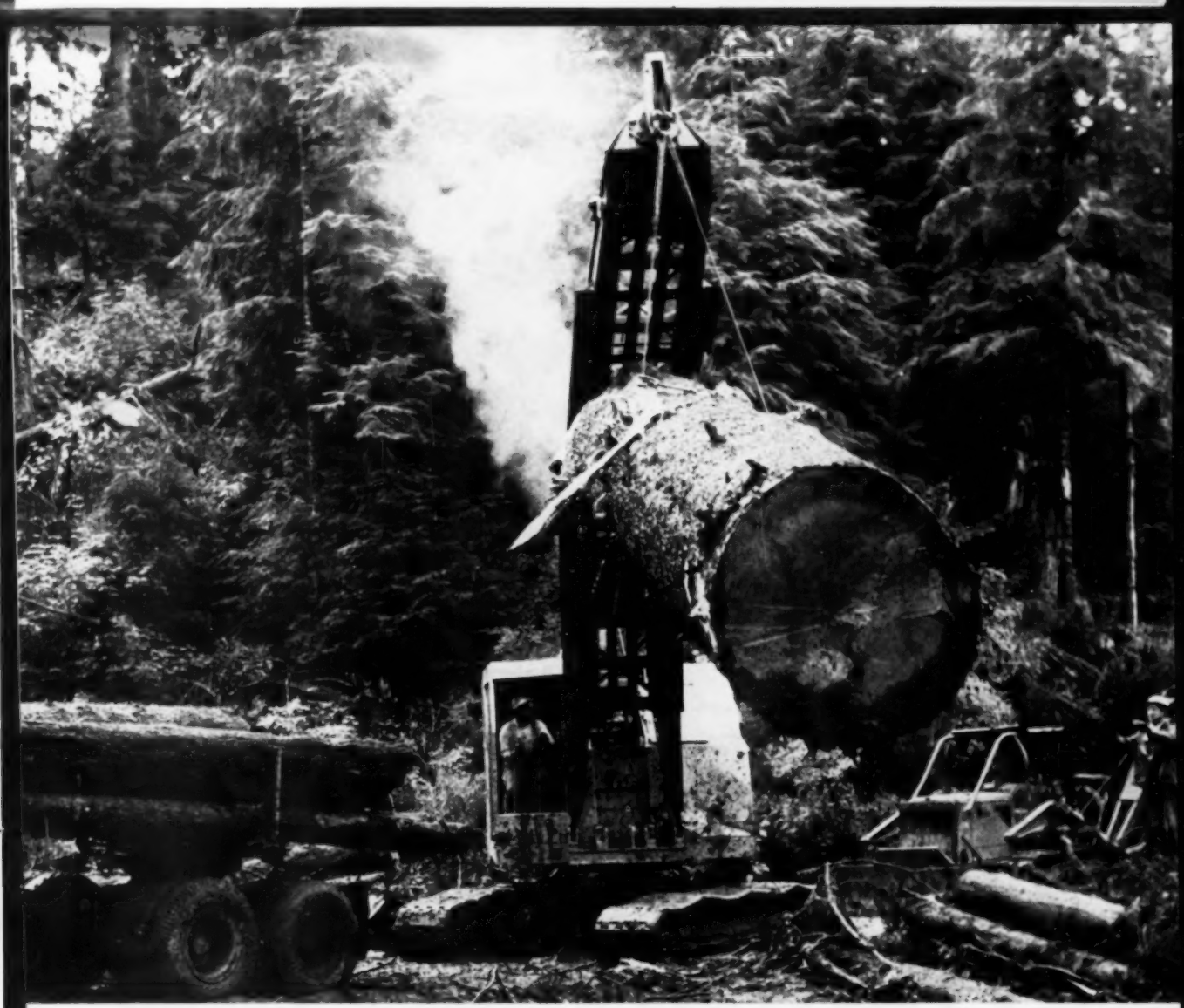
Vane Type Motor

Flow Control Valve

Solenoid Operated Four-Way Valve

In-Line Check Valve

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



Tough American 300 Series Crane . . .

LIFTS THE 'HEAVIEST LOGS FOUND ANYWHERE'

Out in the rain forest area of the Olympic peninsula, old time loggers claim that the hemlock growing there is the heaviest found anywhere—up to 14 pounds per board foot!

Loading these rock heavy giants takes a machine with guts—often one that needs firm level roads and is so heavy that it has to be dismantled for highway travel. This may be O K for big operators who doze trails and spend months off the highways, but not for the smaller operator who must use the "hit and run" technique—move in, cut, load and move on. No time to make roads, less time to strip machines to meet highway limits!

An American 300 Series Crawler Crane has proved ideal for the logging operations of John Kirner who works the Hoko River area on the peninsula. Kirner's American moves over rough, roadless terrain and, with wide crawler pads and rugged construction, operates unfalteringly. At the jobsite, his 300 Series often lifts logs that Kirner would have expected only a larger machine to handle. His biggest lift to date is an 18-foot log, 74 inches across that officially scaled 4710 board feet—a man-sized lift for any machine! And because his American falls within road weight limits, Kirner rolls right onto the highway without expensive "stripping" delays!

Successful American Crane on-the-job stories like this are found around the world. Ask an American crane owner or operator what it can do—then see your American Distributor!

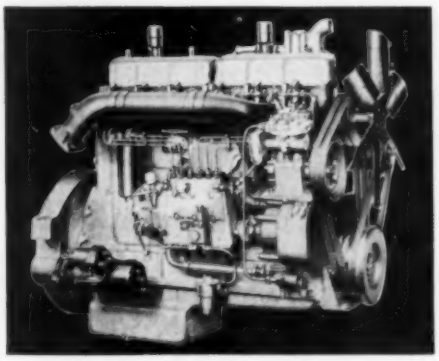
AMERICAN HOIST
and Derrick Company
St. Paul 1, Minnesota

Link-Belt Speeder mobile loader shown is drawn over rough logging terrain by a Waukesha 145-GK Gas Engine

WAUKESHA

779 cubic inch

LOGGING ENGINES



A typical Waukesha 779 cu. in. Engine is this 148-DKB—6 cyl., 5¼-in. x 6-in.

include

- 145-GK—Gas (to 196 hp) or Gasoline (to 216 hp)
- 145-GKB—Counterbalanced; Gas (to 230 hp) or Gasoline (to 240 hp)
- 148-DK—Normal Diesel—to 170 hp
- 148-DKB—Normal Diesel (counterbalanced)—to 200 hp
- 148-DKBS—Turbodiesel (counterbalanced)—to 280 hp

send for descriptive bulletins

303

50th ANNIVERSARY Waukesha MOTOR 1906-1956

WAUKESHA MOTOR COMPANY • WAUKESHA, WIS.

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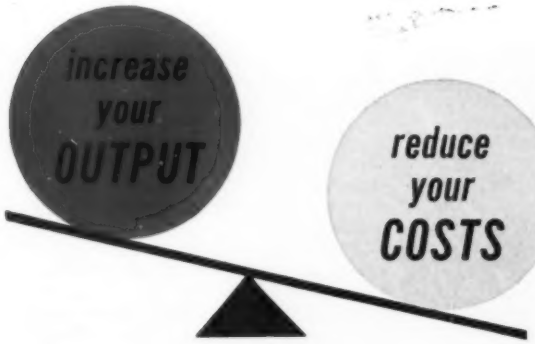


power with CHRYSLER INDUSTRIAL V-8 ENGINES

Output's up, cost's down when your equipment is Chrysler-powered. First, because you've a *truly industrial* engine, an engine designed, built and equipped for heavy-duty operation. A check of the heavy-duty quality features listed here will give you an idea of the kind of performance you may expect from a Chrysler Industrial V-8 Engine.

Second, you've an industrial engine with *oversquare* design—its bore diameter exceeds its stroke—giving you all the advantages of resulting short-stroke performance. Pistons and all moving parts operate at unbelievably slow speeds, thereby greatly reducing friction. (For example, at 2000 engine r.p.m. Ind. 56 Engine pistons travel approximately 1200 feet per minute.) This, in turn, means greater power from the same amount of fuel, cooler engine operation, longer engine life.

Third, you've a deep-breathing engine, thanks to a unique "opened-up" design manifold. This means high volumetric efficiency, greater fuel economy. With Chrysler Industrial V-8 Engines you can select and equip your engines to use whatever fuel best meets your requirements—gasoline, natural gas or L-P-G fuels.

Yet despite all their advantages, Chrysler Industrial V-8 Engines cost less to buy, to install, to operate. They will do fully as much or more than ponderous slow-speed, long-stroke engines. If your equipment is not Chrysler-powered and you can use power within the 270 to 331 cubic inch displacement range, contact the nearby Chrysler Industrial Engine Dealer. Ask him about Chrysler Industrial In-Line 6 Engines too. Or, if you prefer, write: ***Dept. 133, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.***

Here, for example, are some of the heavy-duty quality features and materials you find in Chrysler Industrial V-8 Engines:

CRANKSHAFT—heavy-duty, forged steel, flame or induction hardened. Chrysler-exclusive undercut fillets for added strength. Fillets are shot-peened to counteract surface stresses and fatigue failures.

CRANKSHAFT BEARINGS—heavy-duty, tri-metal with Chrysler-exclusive cast copper-lead intermediate layer with nickel alloy dam to prevent possible corrosion caused by acids in oil.

Combination of Hardened Crankshaft and Heavy-Duty Crankshaft Bearings—offer greater resistance to the abrasive effects of dirt.

VALVE SPRINGS—twin concentric stainless steel. Extra strong dual springs operate as a unit, but either will operate valve alone should necessity arise.

VALVE TAPPETS—hydraulic, adjusting automatically to compensate for expansion, contraction and valve wear. Undercut to prevent sticking due to varnish or sludge deposits.

ENGINE COOLING—maximum allowable cooling water temperature rise between inlet and outlet is approximately 15°. Hottest spot in engine is only 20° hotter than the coolest . . . thereby reducing cylinder block distortion.

TIMING CHAIN—heavy-duty, wider than average for longer life.

PISTONS—aluminum alloy with thermostruts to control piston expansion.

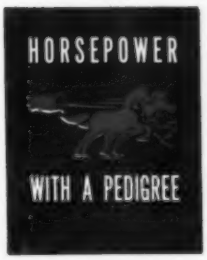
EXHAUST VALVE ROTATION—positive, automatically spreads wear around the entire valve and valve seats. Valves make from ten to fifteen complete revolutions per minute at the speed of most equipment.

EXHAUST VALVES—extra hard stellite valve faces and valve seat inserts. Stellite seat inserts retain hardness in the presence of gases as hot as 1500° F.

SPARK PLUGS—resistor-type for long life. Spark plugs and wiring are covered for absolute protection against dirt and moisture.

DISTRIBUTOR—dirt and moisture proof with sealed cap.

Chrysler Ind. 52 Engine—270 cubic inch displacement



CHRYSLER INDUSTRIAL ENGINES

INDUSTRIAL ENGINE DIVISION • CHRYSLER CORPORATION

Sweden Plans New Particleboard Plant

Reported by L. R. LOUIS

A NEW PARTICLE BOARD plant for Sweden is now under construction by Hylte Bruks AB, one of Sweden's leading pulp and paper manufacturers, at Rydobruk in southern Sweden. Svenska Industriaktiebolag Toy will operate the plant.

The plant is similar to one operated by Vere Engineering Co. Ltd., at Marks Tey, Essex, England. It features the Bartrev press, which is capable of producing up to 30,000 tons per year of board from fibrous materials.

Latest developments will be incorporated in this new plant. In planning the layout of the factory provision has been made for a second Bartrev Press which will follow when the first is in production.

RAW MATERIALS WILL BE forestry thinnings supplemented by mill operational residues such as slabs, edgings, etc. This solid wood is reduced to thin shavings approximately 20 m.m. long, and approximately 2 m.m. thick in special machines designed for this purpose. The shaving machines produce shavings 20 m.m. to 40 m.m. long and from 1 m.m. to 4 m.m. thick. These shavings are cut to preserve the length and direction of the botanical fibre to enhance physical properties of the finished board.

From shaving machine prepared shavings are passed through a grinder to control their width and thence to a storage bin, then control discharged into dryers. Prepared dried shavings are air classified to remove splinters, if any. They then move directly to a storage bin where, on controlled discharge, they are screened to separate the fines.

Selected shavings then pass directly through a separate storage bin and are discharged onto a belt weigher before being mixed with the binding resins. In like fashion screened fines are separately routed to their own storage bin and then by a separate belt weigher to a separate mixer where they are combined with the selected binding resins.

It is possible, and at option, to make single layer boards with a homogeneous section or three layer boards with fines or other prepared material applied to the bottom and top faces.

THE RESINATED FEED, determined by the thickness and density of the board to be manufactured, is laid as a carpet on an endless stainless steel belt where it is continuously compacted before entry into the R. F. heating section of the Bartrev continuous press.

In the R. F. heating section the carpet is heated uniformly throughout to about 70° C. before being carried into the pressure section of the press on the steel belt.

The pressure section provides for compressing the carpet to the required board thickness and raising it to a sufficient temperature to cure the resin while under pressure. Final heating stage is effected in the press by transfer through platens heated to 140-145° C. according to the type of board to be produced. Temperature is maintained by thermostatic control until the compressed carpet leaves the pressure unit as fully cured, fully compressed board. The rigid board is discharged from the press section through a cut-off unit, which trims the board to 4 foot width and to any desired length, limited only by handling methods.

Operators of the new plant in Sweden intend to produce both single layer and three layer boards to meet market demands.

Mr. Louis is vice president of Bramco, Inc., which represents the Bartrev organization in North America.

I'ANCO PRODUCTS

now ! ! ! ALL MANGANESE

"H" CLASS CHAIN INCLUDING PINS

★ 50 Percent greater ultimate strength over malleable

★ DOUBLE the allowable chain pull over malleable

★ PLUS the work hardening ability of I'ANCO manganese steel

– H78 – H82 – H124 – H112 – H110 –H480 –
C-132 and many others

I'ANCO MANGANESE "H" AND "C" TYPE CHAINS ARE OUT-PERFORMING EVERY OTHER MATERIAL AVAILABLE, WHERE GREATER STRENGTH, LONGER LIFE AND LESS MAINTENANCE ARE OF PRIME IMPORTANCE

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No Maintenance Expense-on RELIANCE Logging Fleet!

The fifteen to twenty thousand foot load being dropped on the Reliance Logging Trailer shown above is an operation that has been repeated thousands of times during the last 10 years on the Reliance fleet operated by Hildebrands, Inc. of Ukiah for Masonite Corporation.

Except for tires and brake linings, total upkeep expense on this fleet for the ten year period is exactly *zero*!

That's a typical example of why the top logging operators throughout the West have standardized on Reliance. Their longer operating life, lower maintenance cost and rugged construction for bigger pay-load capacity *prove* . . .

BETTER OWN RELIANCE TRAILERS THAN TRY TO COMPETE WITH THEM!

RELIANCE TRAILER & TRUCK CO., Inc. • San Francisco

LOS ANGELES, Conestoga Equipment Co. • STOCKTON, Reliance Trailer Equipment Sales Co. • SACRAMENTO, Reliance Trailer Sales
PORTLAND, Pacific Body Builders • SEATTLE, Vehicle Sales, Inc. • HONOLULU, Grace Brothers, Limited • ANCHORAGE, Alaska, James Burke & Co.

The Little Giant HAS MET THE TEST

Lighter weight through the use of magnesium castings is a *new advantage* and a *new feature* of the tested and proved MALL OMG Chain Saw—the all-purpose saw in the famous MALL "MG" series of custom-built chain saws. This light, powerful, dependable saw has met the test on farm woodlot, in pulpwood and timber, for fence post and firewood cutting, for orchardists and estate owners, for right-of-way and land clearance ...in fact, it's a little giant with a big success record. Try it!

Model 1MG

Model 2MG

Model 3MG

Model 4MG

Model 5MG

MALL TOOL COMPANY

PORTABLE POWER TOOLS • ELECTRIC • AIR • GASOLINE

7716 South Chicago Ave., Chicago 19, Ill.

Gentlemen: Have your representative or nearest Dealer give me a FREE demonstration.

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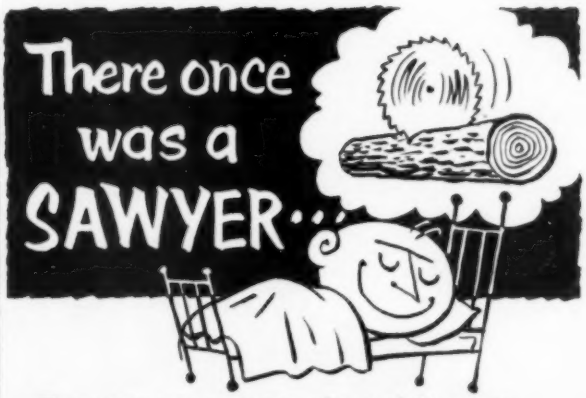


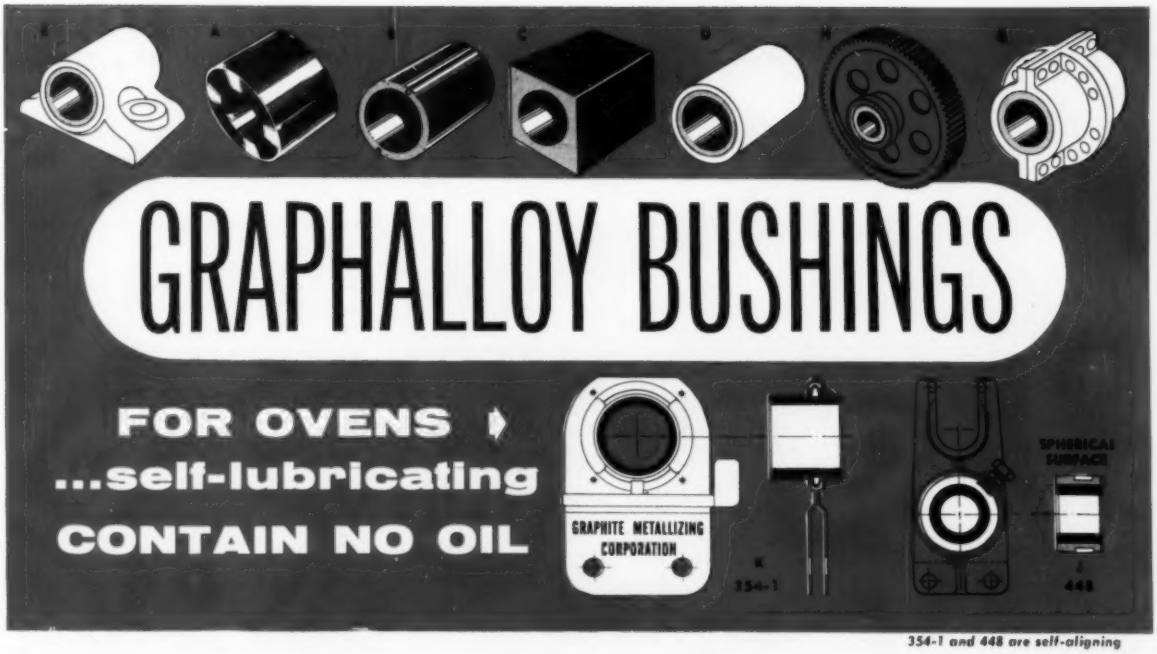
There once was a sawyer, who at night was so weary —
He rolled and he tossed and his eyes became bleary.
He hashed over maintenance problems (subconscious)
And wrestled his carriage while flat on his haunches.
When dawn finally came (completely exhausted) —
He staggered to work and exclaimed, "I'll be frosted —
This sawyer's fatigue must come to an end —
I'm tied up in knots and can't seem to unbend."
The boss listened carefully to suggestions and woe,
Then blurted out "Natch . . . I wanta save dough."
You've guessed it, of course . . . now the sawyer sleeps swell —
They installed a

LOG CARRIAGE DRIVE built by ZIDELL!

Replace YOUR outmoded and troublesome steam, hydraulic or friction type carriage feed with a ZIDELL D. C. ELECTRIC Variable Speed DRIVE. Zidell's Constant Torque, Instantaneous Reversing and Variable Speeds ranging from zero to maximum provide extremely smooth acceleration and deceleration. You are assured of longer cable life, higher production, less maintenance and greater savings.

BUY NOW FOR NOTHING DOWN with monthly payments based on your M cut (on approved credit). Write TODAY for literature and prices.

ZIDELL MACHINERY & SUPPLY CO.



354-1 and 448 are self-aligning

The GRAPHALLOY Process was patented 42 years ago and the name GRAPHALLOY has been our registered trade mark since that time. While this company has been selling GRAPHALLOY for the past 42 years, recent developments have added materially to its properties.

OPERATE DRY to Temperatures of 700° F.

BOARD OVENS – Copper-GRAPHALLOY General Purpose Hanger Assembly 354-1 was designed especially for roller-type board ovens. Copper-GRAPHALLOY is used primarily because of its long life, eliminating shut downs for greasing and maintenance. Astonishing savings in avoiding loss of production have resulted from the installation of these hanger assemblies in place of ball bearings since Copper-GRAPHALLOY Bushings have a normal life in this service of five to ten years without replacement.

VENEER OVENS – Copper-GRAPHALLOY Bushing Assembly 448 was designed especially for the usual veneer oven bearing. It replaces the present ordinary grease-lubricated roller . . . *and eliminates shut downs for greasing.* These Copper-GRAPHALLOY Bushings have run continuously 24 hours per day seven days per week *for ten years* without any down time.

REFUSE BURNERS – Copper-GRAPHALLOY Bushings have been used for refuse burner conveyor bearings and pillow blocks at the hot end of the conveyor. Bearings have been in operation 5 to 7 years without replacement and without attention. *See our Data Sheet 478.*

GRAPHALLOY BUSHINGS cut maintenance costs in these ways:

• Have long life • Require no attention • Operate where oil or grease lubrication cannot be used • Avoid down time • Do not soften at high temperatures • Have high tolerance for dust • Withstand high temperature (700°F.) as in dryers, ovens, refuse burner conveyors, and in rotary steam joints.

Use GRAPHALLOY BUSHINGS For TROUBLE-FREE OPERATION in the following LUMBER MANUFACTURING EQUIPMENT:

DRYERS • BOARD DRYERS • PLYWOOD DRYERS • GLUERS • VENEER JOINERS • KILNS • KILN CARS • IMPREGNATING KILNS • PATCHERS • HOT PRESSES • REFUSE BURNER CONVEYORS

Items *E, D, G* and *K* can be supplied complete as shown

USE OUR 42 YEARS OF BEARING EXPERIENCE!

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Please send me descriptive literature and Bushing Inquiry Form 107A.

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Use UNIT with SAFETY!

Tons of TIMBER ...perfectly controlled!

Logging men agree that UNIT rubber-tired or crawler machines offer plenty of lift-ability for handling "the big ones" with speed and accuracy . . . plus safety.

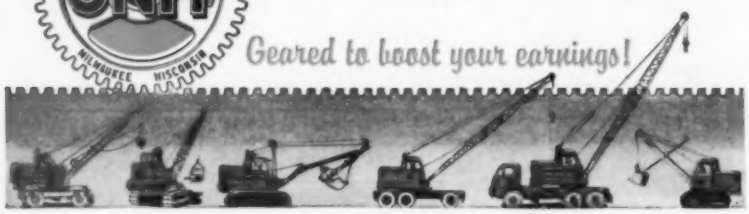
Advanced engineering features such as one-piece gear case . . . involute splined shafts . . . direct-in-line engine mounting with torque drive . . . and the safety-promoting full-vision cab . . . make UNIT a highly rated machine for logging operations.

UNIT models are available in ⅜ to ¾ yard excavators. Cranes up to 20 tons capacity, crawler or mobile types . . . gasoline or diesel. Fully convertible to all attachments.

Send for Bulletin Now

UNIT CRANE & SHOVEL CORP.
6615 W. Burnham St. • Milwaukee 14, Wis., U.S.A.

Geared to boost your earnings!



British Board Manufacturer Makes Offer of Information

Reported from England
By T. B. DODSON

• A ten-acre site at Rainham, Essex, England, has been acquired by British Plimber, Ltd., of London whose "Plimberite" wood chipboard is already well known throughout the world. At Rainham, additions are being made to a large factory building of most suitable design, and only two years old, to accommodate the latest concept of chipboard production machinery.

Although the current trend in chipboard manufacture is towards leftovers the use of forest thinnings, British Plimber will continue to use industrial leftovers in their new project. Selected softwood planner shavings, available in adequate quantities locally and claimed by British Plimber to produce boards of the highest quality, will be the main raw material, thus eliminating cutting, barking and chipping of logs, and reducing greatly the drying requirements.

With an intake of upwards of 5-tons of shavings per hour, British Plimber believe they will be the world's largest users of this kind of industrial residues.

The plant will incorporate many novel features. The production line will have fully automatic control throughout, from the intake of the wood shavings to the unloading of the press.

A storage bin capable of carrying 400-tons of wood shavings, sufficient for a week's use on double shift, is now being erected. Dryers, mixers, weighers and all other preparation machinery and the presses with ancilliary equipment, are on order and due for delivery in the near future.

This versatile plant, with a productive capacity of some 24 million square feet annually, will produce boards of the highest quality to meet the needs of specialized users, including "sandwich" types for the furniture industry and homogeneous boards for building and other work.

No details of the plant or layout can be released presently. British Plimber solicits inquiries from firms contemplating production of chipboard, particularly from softwood planer shavings, whose disposal may become a problem in the future.

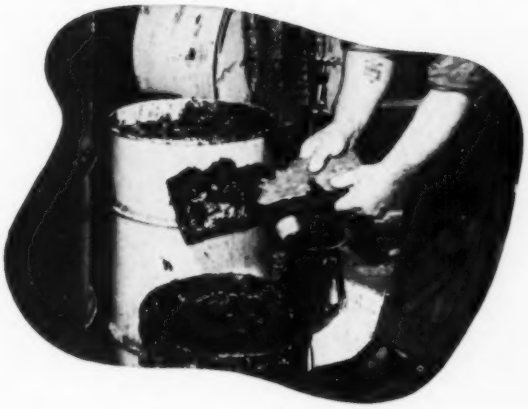
(Ed.'s Note: American lumbermen concerned with disposal of heretofore unutilized leftovers may wish to accept Mr. Dodson's interesting offer in the last paragraph of this report. Write to the editor of THE LUMBERMAN for further details.)

Mr. Dodson is general manager of British Plimber Limited.

EASY WAY TO PUT OUTPUT ON THE UPSWING!

shift lubrication methods from

Backward to Forward!



ALEMITE AIR-OPERATED TRANSFER PUMP

gives 63% faster lubricant transfer

...saves right down the line!

The *real cost* of plant lubrication is not just the *lubricant* alone! Actually, it's the time and labor needed to get the lubricant *out* of the original drum—*into* a bucket pump or powergun—and then *applying* it to machine bearings. That's where the real costs add up!

And that's why an Alemite Air-Operated Transfer Pump can cut costs in your plant—especially if you are using old-fashioned hand methods of lubrication. It transfers 37 pounds of pressure gun grease *per minute*—direct from the original drum—completely sealing the lubricant at all times—protecting against mess, waste and contamination.

It's fast—and versatile! It can even handle alcohol, cutting oils, kerosene—almost any non-corrosive non-abrasive fluid you use by the drum. Delivers light fluids at a rate of up to 15 gallons per minute!

There's no better way to speed up your handling of lubricants—because an Alemite Transfer Pump pays for itself by saving man-hours and machine-hours as well!

• A 400-pound barrel of lubricant arrives at the plant—sealed, fresh, "refinery clean."

• An Alemite Transfer Pump is inserted in the bung-hole. It is threaded to fit—completely reseals the barrel.

• In less than a minute a 25-pound bucket pump is filled! No contamination, no air pockets, no mess or waste!

• Now the bucket pump is ready to service hundreds of hungry bearings with lubricant that is protected all the way from barrel to bearing!

FREE! **New Booklet:**
"5 Plans for Better Lubrication"
Alemite, Dept. HH-36, 1850 Diversey Pkwy.
Chicago 14, Illinois

Please send me my FREE copy of "5 Plans for Better Lubrication."

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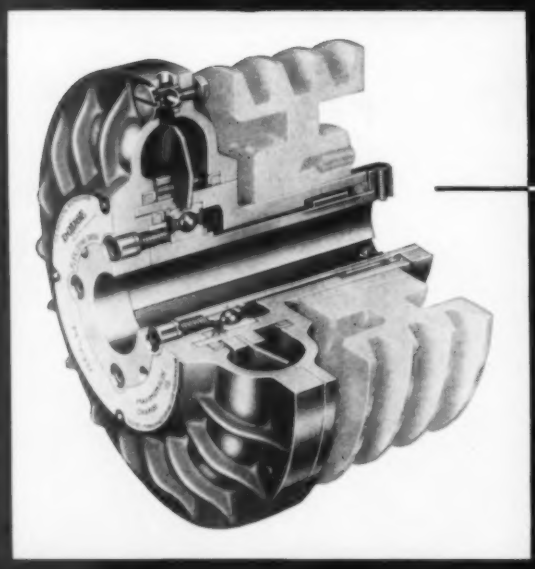
ALEMITE

Ask anyone in industry

A PRODUCT OF SW STEWART WARNER



Great Performance!

– is the verdict from the field on

FLEXIDYNE

THE DRY FLUID DRIVE

Experience in the field proves that the new principle employed in Flexidyne provides a better way to handle difficult drive problems. Now delivered from stock, Flexidyne Drives and Couplings are used in a wide variety of applications. Already reports like these are coming in about Flexidyne performances in many tough assignments:

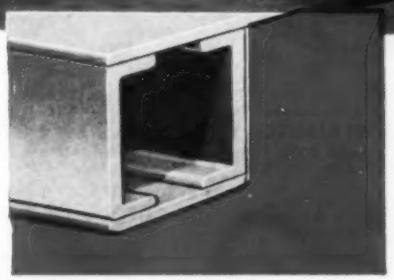
RAILROAD CAR PULLERS... *"Starts fine . . summer or winter!"*
CONVEYORS... *"We start under full load now!"*
COTTON CARDS... *"Finally . . the soft start!"*
TRAVELING CRANES... *"Spots our load . . and how!"*
PUMPS... *"Now we are using smaller motors, too!"*
VENTILATING FANS... *"Takes off smooth as silk!"*
...AND OTHER HEAVY INERTIA LOADS... *"Wonderful performance!"*

Call the Transmissioneer, your local Dodge Distributor, for details about Flexidyne. Factory-trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write to

DODGE MANUFACTURING CORPORATION, 900 Union Street, Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

SAVES $10,000 to $20,000 PER SHIP LOADING!



Sectional view of Gerlinger structural steel frame

Designed with box construction, braced with channel cross members at front and rear, with heavy intermediate cross members for maximum strength, perfect alignment and long life.

GERLINGER Fleet "Job-Proved" For POPE & TABOT Fleet

6 Gerlinger Material Carriers x 7 million board feet x 32 ships a year . . . quite a figure for the Pope & Talbot Lumber yard at St. Helens, Oregon, *but certainly no problem.* The Gerlingers solved that!

Here's why H. J. Olsen, plant manager, is so enthusiastic: "We ship lumber all over the world and began using Gerlingers with our new process of packaging lumber to speed up loading. Today we are cutting 5 to 10 days off of Pope & Talbot's own fleet turn arounds (round trip via Panama Canal from Oregon to East Coast ports and return) . . . a real savings when it costs approximately $2,000 a day to operate a lumber vessel."

GERLINGER CARRIER COMPANY
DEPT. T-6 • DALLAS, OREGON

Please send FREE
Gerlinger Material Carrier Catalog ☐
Gerlinger Fork Lift Truck Catalog ☐

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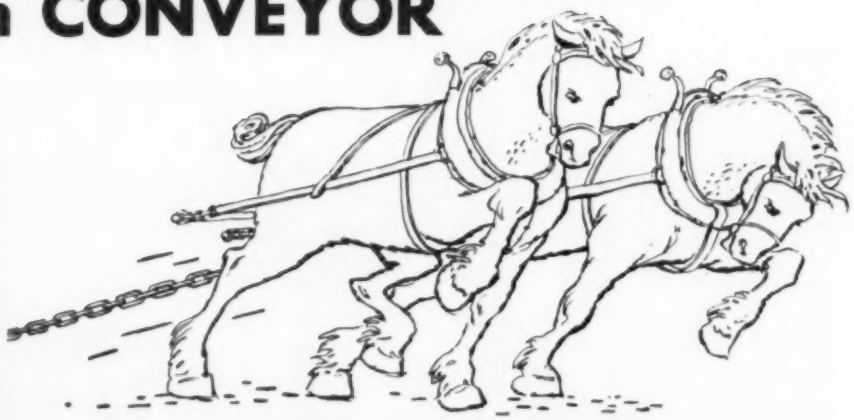
GERLINGER PRODUCTS

The Dependable TEAM on Tough CONVEYOR JOBS



Moline Log Haul Chain

Moline Refuse Flight Conveyors

MOLINE

Log Haul Chain and Refuse Flight Conveyors

With a wide range of mill chains for every purpose

LONG LINK

CHAIN CONVEYORS

Moline Flight Conveyors

DETACHABLE TRANSFER CHAINS
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(MALLOY) LONG LINK CONVEYOR CHAINS
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MAKING MALLEABLE CHAINS FOR 60 YEARS

MOLINE MALLEABLE IRON CO. ST. CHARLES ILLINOIS

NEW GRADE NAMES FOR WEST COAST LUMBER *are NOW in effect*

Boards, Dimension and Timbers of Douglas fir, West Coast hemlock, Western red cedar and Sitka spruce now have grade names instead of numbers as shown below:

NO. 1 . *becomes* **CONSTRUCTION** — MILL 750 WCLB CONST

NO. 2 . . . . . *becomes* **STANDARD** — MILL 750 WCLB STAND

NO. 3 . . . . . *becomes* **UTILITY** — MILL 750 WCLB UTIL

NO. 4 . . . . . *becomes* **ECONOMY** — Not Customarily Grade Stamped

There is no change in the identification of Select Merchantable Boards, Select Structural Dimension and Timbers, or vertical grain Clears.

The top grade of flat grain Clears becomes **C&Btr.** — MILL 750 WCLB C&BTR

For additional information on grades write to:

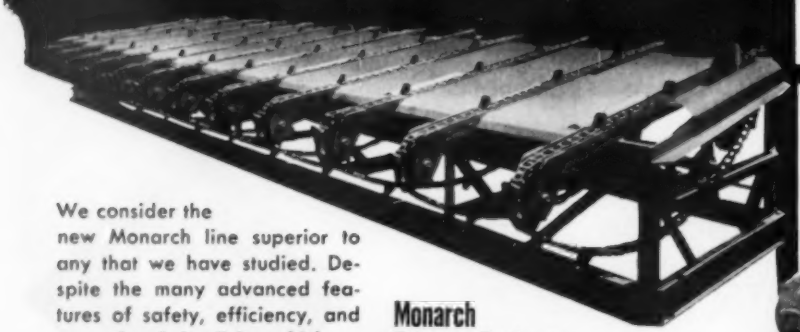
WEST COAST LUMBERMEN'S ASSOCIATION
1410 S.W. MORRISON, PORTLAND 5, OREGON

All Grade Stamps shown are registered, U. S. Patent Office.

SPEED is what we want... so we use a MONARCH Trimmer

Joe Gallacci
Gallacci Lumber Company
Cloverdale, California
Told us:

"Operating costs are so high today that about the only margin of profit left in the lumber business is in the speed with which quality lumber can be produced. To help meet this requirement we ordered a Monarch trimmer. Our choice was a good one. The unit is fast, accurate, easy to operate, and profitable."



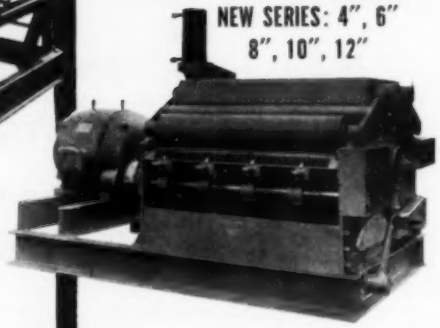
We consider the new Monarch line superior to any that we have studied. Despite the many advanced features of safety, efficiency, and operational simplicity, which we have included in this series, we are able to offer units at even less cost than older designs now on the market. Complete specifications for either undercut or overhead trimmers are available upon request.

Monarch Trimmer Features:

- Belts, arms and air cylinders are guarded by removable covers which keep slivers and sawdust out of the mechanism
- Rolls mounted ahead of the saws permit even ending of the lumber. (Optional)
- Chains have rounded face dogs for easy sliding of the lumber.
- Belts can be quickly changed without disturbing arbor shaft bearings.
- Air lifts on saws are controlled by Solenoid valves operated by the trimmer man

Monarch Edgers

NEW SERIES: 4", 6" 8", 10", 12"



Easiest to shift of any, yet the Monarch edger guarantees accuracy of cut with positive new lock!

Available as either stub or table edger with or without power shift.

Simplified shifting mechanism reduces effort and labor time, yet each board receives a true clean edge, absolutely uniform. Saw arbors are double-keyed, large diameter, chrome-plated alloy steel, superior to any model of comparable price.

Complete specifications available upon request.

Monarch
Forge & Machine Works, Inc.

Send for Complete Information

MONARCH FORGE AND MACHINE WORKS, INC.
2130 N. W. York Street, Portland 10, Oregon

Gentlemen: Please send me additional literature on
Bandmills ☐ Carriages ☐ Line Bar Resaws ☐
Resaws ☐ Trimmers ☐ Edgers ☐

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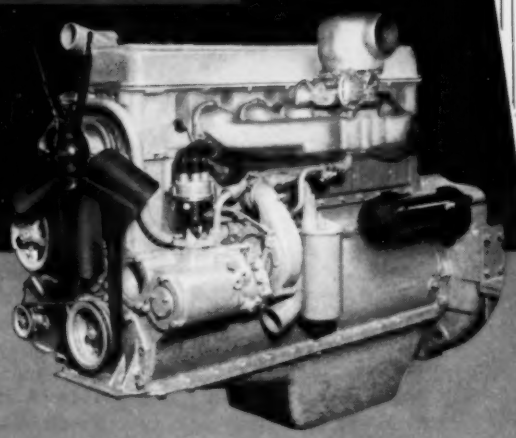
HALL-SCOTT

More power per pound than any other truck engine !

the New "590"

Increase payload up to 2000 pounds in 200 HP trucks, for extra earnings on every trip.



Get complete specifications from your nearest dealer or write:

Hall-Scott Motors Company
Berkeley 10, California

SPECIALISTS... at your Service since 1909

RIDING A SEA OF *Logs!*

MADE POSSIBLE BY A SEA-HORSE

You couldn't put a marine engine to a more rigorous test than "riding a sea of logs." The Johnson Sea-Horse powering the above boat meets the test with flying colors.

It has the stamina to withstand the shocks of underwater obstructions. It has the endurance to keep on running for hours at engine-punishing crawling speeds—and at full throttle, all day, when necessary.

It has the versatility to operate in shallow and obstructed waters where no other type of marine engine dare go.

Now for 1956 Johnson gives you more power, up to 30 hp—more models, nine, from 3 to 30 hp—new features such as faster starting, stall-proof idling, and more economical operation—and new styling.

Traditional Johnson Dependability is yours with every Sea-Horse you buy. Ask your Johnson Dealer. Look for his name under "Outboard Motors" in your classified telephone directory.

FREE: Write for the new 1956 Sea-Horse Catalog. Complete, factual, helpful.

JOHNSON MOTORS, 6400 Pershing Road, Waukegan, Illinois
A DIVISION OF OUTBOARD, MARINE & MANUFACTURING COMPANY
In Canada: Manufactured by Johnson Motors, Peterborough

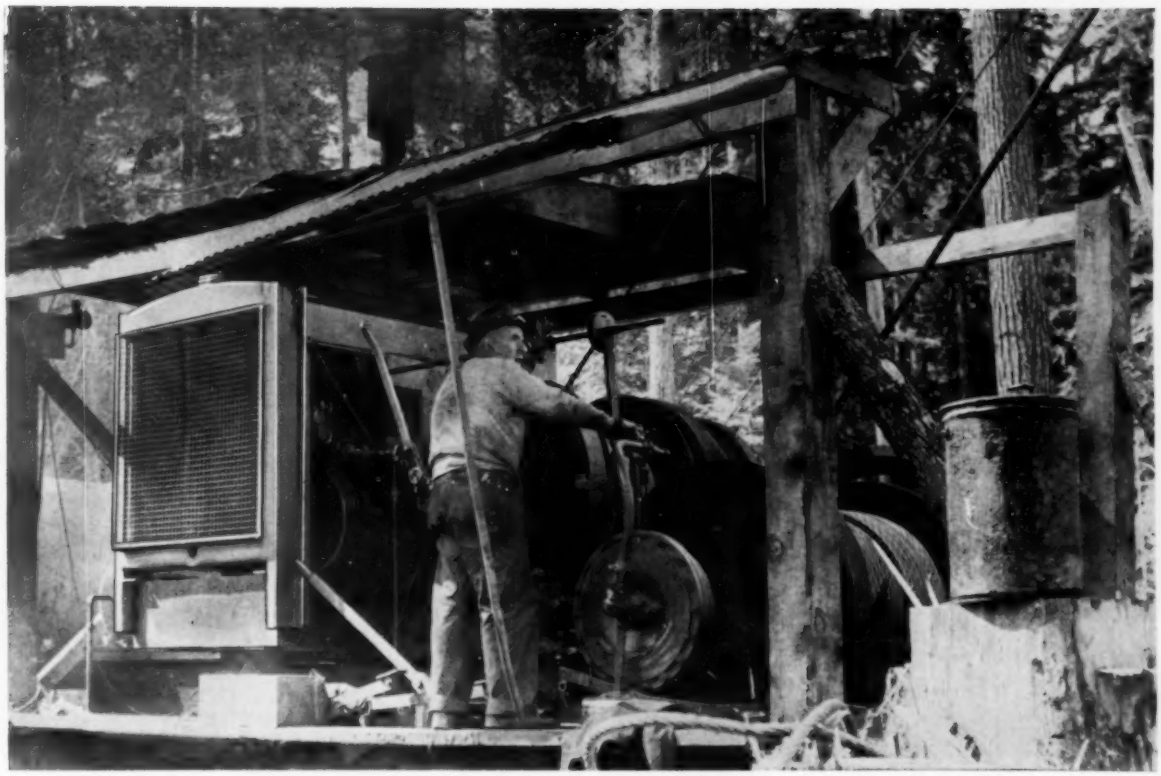
NINE GREAT MODELS

JAVELIN*	30 hp.	$582.00
SEA-HORSE 30*	30 hp.	552.00
SEA-HORSE 30	30 hp.	462.00
SEA-HORSE 15*	15 hp.	452.00
SEA-HORSE 15	15 hp.	362.00
SEA-HORSE 10	10 hp.	321.00
SEA-HORSE 7½	7½ hp.	241.00
SEA-HORSE 5½	5½ hp.	216.00
SEA-HORSE 3	3 hp.	146.00

**Electric Starting . . . Prices f.o.b. factory, subject to change . . . OBC certified brake hp at 4000 rpm (30's at 4500 rpm)*

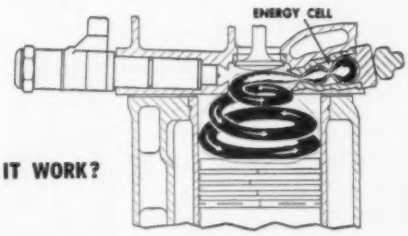
Johnson
SEA-HORSES
FOR DEPENDABILITY

ALL JOHNSON SEA-HORSES ARE PROTECTED AGAINST SALT WATER CORROSION — NO FLUSHING NECESSARY



WHAT "Follow-Through" COMBUSTION DOES FOR YOU

"Follow-Through" combustion describes the way fuel burns in an Allis-Chalmers diesel engine. Because of it, more energy is released by combustion into productive power . . . engines last longer.

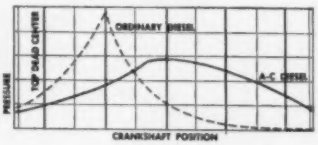


HOW DOES IT WORK?

Fuel is injected into the combustion chamber and into a special *energy cell.* Combustion starts in the chamber and spreads into the energy cell, where it ignites under tremendous pressure and heat. After a split-second delay, pressure from the energy cell creates a cyclone turbulence in the combustion chamber. This atomizes the fuel and provides a thorough fuel-air mixture. This action produces highly efficient burning, builds up combustion pressure slowly and evenly and retains it longer.

BC-3

ADVANTAGES OF "*FOLLOW-THROUGH*" PRESSURE



This chart compares combustion pressures at different crankshaft positions in Allis-Chalmers and ordinary diesel engines. In ordinary diesels (dotted line), pressure builds up fast, producing a hammer blow shock load while crankshaft is near dead center.

In the Allis-Chalmers engine, effective pressures are sustained over a longer period when leverage on the crankshaft is more favorable. There is more turning force available for work and it is applied against the crankshaft smoothly.

Result: More sustained power, smoother operation, longer engine life.

"Follow-Through" combustion is just one of many things that are "so good" about Allis-Chalmers diesel engines. You can get the full story from your Allis-Chalmers Buda Division engine dealer.

ALLIS-CHALMERS, BUDA DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

the INSLEY log loader

THERE'S AN **INSLEY** WORKING NEAR YOU

• One Man Control . . . Self-Propelled • Independent Travel and Swing • Tow-Bar for the Long Hauls • Power Load Lowering on Load (hoist) Line • Adaptable to All Types of Logging Booms • Has Mobility Needed for "Spot Loading" and Clean Up Work • Adaptable to Full Range of Attachments for "Off-Season" Work • Available with Fluid Coupling or Torque Converter

INSLEY MANUFACTURING CORP. • INDIANAPOLIS, INDIANA
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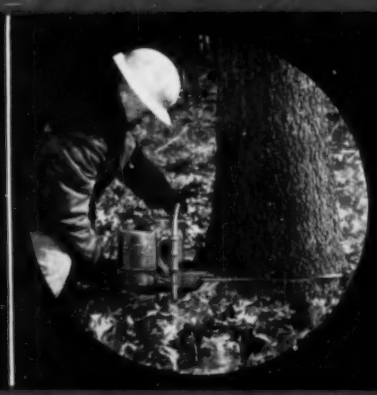
New HOMELITE EZ



...the Direct-Drive CHAIN SAW with ALL of the features YOU want

Only 19 pounds

Full 5 Horsepower

New Low Cost

Faster Cutting Speeds

AND WITH THE NEW HOMELITE FLOATING POWER, you'll find handling ease you never knew before. The all-angle, any-position carburetor gives you full power cutting — whether you're felling, bucking, notching, limbing or under-cutting.

Floating Power lets you cut with less effort, less fatigue than any other chain saw. Because the Homelite EZ weighs only 19 pounds you can carry it anywhere. Its full 5 horsepower cuts through 8″ Oak in 5 seconds and 18″ Pine in 14 seconds. And the three bar sizes — 17″, 21″ or 25″ will handle trees up to 3 feet in diameter.

The EZ brings you Homelite dependability at a new low cost — not just a low initial cost, but also lower maintenance and operating costs than any other direct-drive chain saw.

See this new floating power now! Try it and you'll know why the Homelite EZ offers easier cutting, faster cutting, more profitable cutting for your dollar.

Ask your Homelite dealer for a free demonstration. Also ask about the convenient time payment plan.

FREE!

Win a Homelite

24 Homelite EZ chain saws being given away each month. Nothing to buy. Nothing to write. No obligation. Just ask your dealer how you can win. See him today!

A Complete Line of Chain Saws for every cutting job.

Manufacturers of
Carryable Chain Saws • Pumps • Generators • Blowers

HOMELITE

A DIVISION OF TEXTRON AMERICAN, INC.

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Canadian Distributors:
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LOG TURNERS — POND & DECK SAWS
CHAIN SAW VENEER CORE CLIPPER
ROLL TABLES — SAW BARS
IDLERS — OREGON SAW CHAIN
CHAIN SAW OILERS

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CASCADE INDUSTRIAL SUPPLY, INC., Grants Pass and Klamath Falls, Ore., Redding, Calif.
W. S. WALTER CO., Tacoma, Wash.
INDUSTRIAL SUPPLY, Kalispell, Mont.

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DESIGNERS OF SAWMILL AND LOGGING EQUIPMENT
2516 N. W. 29th AVE. *Industrial Division* PORTLAND, OREGON

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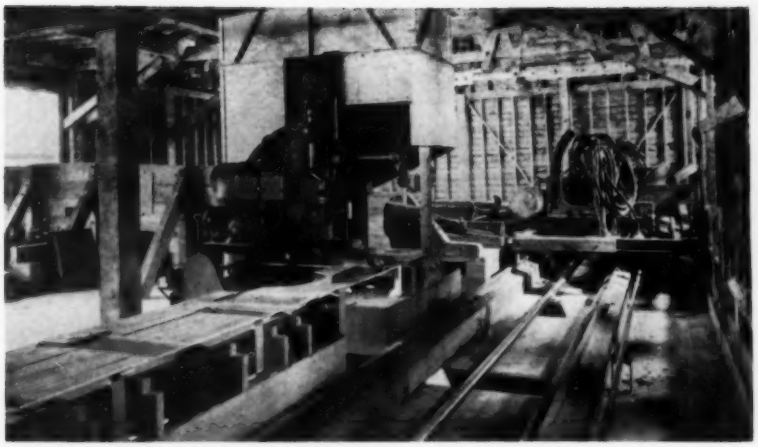


ORDER FOR ADDITIONAL band mill equipment has been placed in the U. S. by N. Z. Forest Products Ltd. This will duplicate output of the present U. S.-made mill at Kinleith shown above, which is a 7-ft. Klamath Iron Wks. band. Lumber cut will increase to 75MM bf/year.

New Zealand Makes Strides In Timber Utilization Practices

Reported from Auckland by A. E. IRVINE

THE YEAR 1955 was an outstanding one for New Zealand's exotic forest industry which is now the country's fourth largest. On his return from a business tour of the U.S.A., Britain and Europe, Sir David Henry, Managing Director of N.Z. Forest Products Ltd., announced that his company would spend new millions on expansion.

Plans include the installation of a new paper machine to raise kraft paper output to 50,000 tons annually. Sulfate pulp production will be increased to 65,000 tons annually, and the installation of further plants will step up output to over 100,000 tons.

Fibre building board output will increase to 115 million sq. ft. yearly when new plant from the U.S.A. is installed.

ANOTHER IMPORTANT EVENT in 1955 was the making of New Zealand's first newsprint at the Tasman Pulp and Paper Co.'s mill at Kawerau. Capacity output is 75,000 tons annually. The Tasman Co. will also produce up to 72 million bd ft of pine annually.

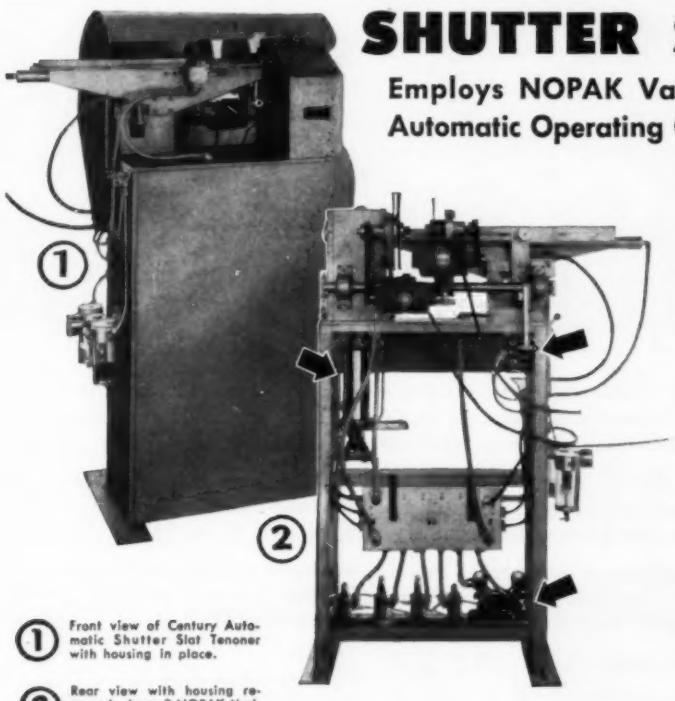
Whakatane Board Mills Ltd., third largest of New Zealand's "Big Three" in the pine forest utilization field commenced operating their new cardboard making machine, raising plant capacity to 30,000 tons of cardboard yearly. This company also mills 10 million board feet of sawn timber annually, half of which is exported to Australia.

With supplies of native timber diminishing, New Zealand is making increasing use of her exotic pine forests. Radiata pine, or Monterey as it is known in its native California, is the predominant species. Of a total of over 616 million board feet cut by all mills in New Zealand last year, 293 million board feet was Radiata.

Mr. Irvine is public relations officer for N. Z. Forest Products Ltd., one of the leading New Zealand industries.

SHUTTER SLAT TENONER

Employs NOPAK Valves and Cylinders to Implement Automatic Operating Cycle



This completely automatic machine, built by Century Tool and Engineering Co., Culver City, Cal., turns out 1200 tenoned wood shutter slats per hour, *automatically*. It cuts dowel-like projections on both ends of each slat and cuts the individual pieces to length. The machine continues to re-cycle automatically until the complete length of stock is cut into tenoned shutter slats.

The cutter head is moved into position by a 2" x 2" Model E NOPAK Cylinder. The stock is rotated 360°, during the cutting operation, by a NOPAK 2½"x6" cylinder, controlled by a NOPAK Model V250-R Slide Valve.

This is but one example of how NOPAK Valves and Cylinders are used in automated operating cycles in many types of machinery and equipment.

① Front view of Century Automatic Shutter Slat Tenoner with housing in place.

② Rear view with housing removed, shows 2 NOPAK Model E Cylinders and NOPAK Model V250-R Slide Valve.

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

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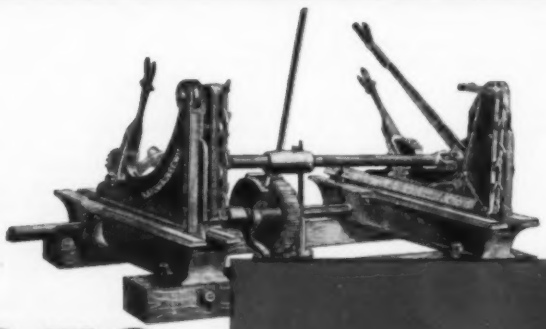
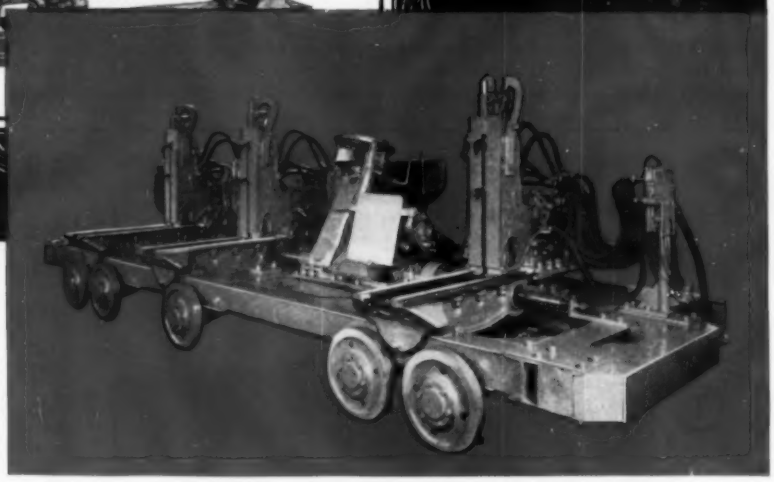
2779 SOUTH 31ST STREET • MILWAUKEE 46, WISCONSIN

100th anniversary



1856

1956



WORLD'S LARGEST BUILDERS OF HEAVY DUTY SAWMILL MACHINERY

This year marks the beginning of the second one hundred years that Filer & Stowell will serve the lumber industry in the development and manufacture of sawmill machinery.

Filer & Stowell is proud of its service to the lumber industry over these past one hundred years and of the name "Filer & Stowell", which is now on sawmill machinery used all over the world.

As we rededicate ourselves to another century of serving the lumber industry, we want to thank our customers, for it is they to whom much cerdit must go for the growth of Filer & Stowell.

The Filer & Stowell Company

MILWAUKEE 7, WISCONSIN

an ACCO product

American Cable TRU-LAY VHS | 15% STRONGER

Cut costs 3 ways with New VHS Choker and Arch Lines

Loggers are finding that by using chokers and arch lines of new VHS Wire Rope they can make important savings in at least three ways.

1-Easier Handling—Made from a new grade of steel for wire rope, VHS is at least 15% stronger than Improved Plow Steel—the strongest grade available before VHS. This extra strength often allows you to use smaller diameter lines for choker and arch lines. This means easier handling for choker setters. And ACCO's Patented Dualoc endings on chokers further increase this ease of handling.

2-Longer Life—New VHS is not only stronger, it's also tougher . . . more wear resistant. Developed specifically for use in logging chokers and arch lines, it stands up better in these tough services . . . gives much longer life.

3-Cuts "Down Time"—The longer life you get with VHS arch lines and chokers makes other important savings by cutting "down time" of equipment for wire rope replacement.

At your distributor now—Your American Cable distributor has new VHS logging chokers and arch lines in stock now. Just call him and tell him the size you want—you don't need any complicated specifications.

Ask your American Cable Distributor Salesman or write to the nearest American Chain & Cable Company office listed at right for Brochure **DH-489**

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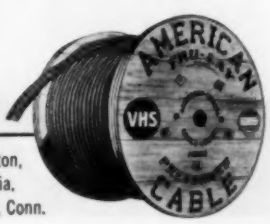

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NEW 1956 CHEVROLET

WEIGHT CLASS! CHEVROLET

New Chevrolet trucks for '56 bring you new heavies, middleweights and lightweights in eight great new series—new power and performance to save more money on your hauling job!

New Heavyweights—New Tandems! All-new heavyweights in 9 wheelbases, with maximum G.V.W. ratings up to a new high of 32,000 lbs.; G.C.W. up to 50,000 lbs.

Ultra-Modern Features! Tubeless tires, standard; High-Level ventilation and panoramic visibility; plus Concealed Safety Steps on most models.

Wider Range of Drives! There's an automatic drive in every series with new Powermatic for most middleweights and heavies; Hydra-Matic for light-duty models. Both extra-cost options. A new 5-speed transmission is standard in 9000 and 10000 series models; optional at extra cost in other heavies and most medium-duty models. New heavy-duty 5-speed is an extra-cost option in models with new Loadmaster V8.

A Modern V8 for Every Model! And introducing the completely new 322-cu.-in. Loadmaster V8, standard in new 9000 and 10000 series heavyweight models.

See Your Chevrolet Dealer and his new Task-Force line before you buy. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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COVER THE NORTHWEST!

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5 MOORE V. WITTINGTON ..... Victoria

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6 CONIFER TIMBER ..... Fortson
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8 POPE & TALBOT INC. ..... Port Gamble
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SMALLER MACHINE CLASS . . . 8, 10, 12, 15 tons on crawler mountings.

MOTO-LOG LOADERS . . . 2-engine type on rubber-tire carrier; 6, 10, 15, 17½, 22½, 25, 30 and 45-ton capacities; travel speeds to 45 m. p. h.

LARGE LOG LOADERS . . . available in 30, 40, 45 and 61-ton capacities on crawler mountings.

LARGEST MOTO-LOG LOADER . . . 2-engine type; 45-ton capacity — largest crane on rubber; 27 m.p.h. travel speed.

INTERMEDIATE LINE . . . available in 20, 22½ and 25-ton capacities on crawler mounting.

SELF-PROPELLED LOADERS . . . single-engine model on rubber tires; 10, 15, 17½, 22½ and 30-ton capacity; 7 m.p.h. speed.

These are but a few of the many Lorain Log Loaders to fit your show . . . for large logs or small . . . for many fast moves or more localized service. Lorains are quickly convertible to shovel, crane, dragline, clamshell or hoe.

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COMPLETE SEMI-PORTABLE BAND SAWMILLS

Specifically designed for cutting small stands of timber
Minimum capital investment and erection cost
Permanent mill accuracy and production
In operation 7-10 days
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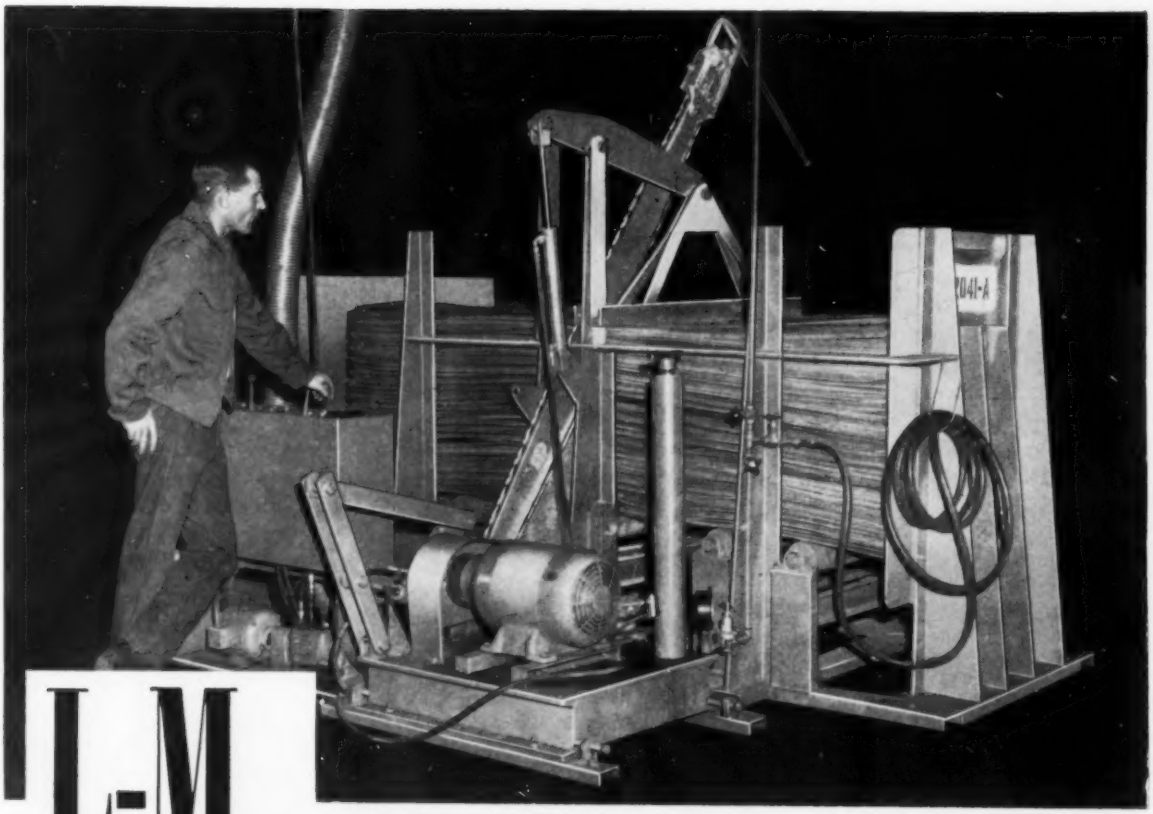

L-M's NEW *COMPLETE PACKAGE* UNIT FOR CORE VENEER & FISHTAILS

THE L-M PD4 CORE VENEER SAW CHAIN . . . Exclusively designed for one purpose only—to cut core veneer and fishtail stock smoothly, accurately, and at top speed *without tearing.* Only refuse is *sawdust — no chips — no splinters!* It's the only specifically designed core veneer saw chain on the market, and it's job-engineered to save you time and money!

CUTS DRY OR GREEN VENEER. Clean-cutting with either dry or green veneer. No change-over, no troubles to stop the work.

Send for Folders on L-M Specifically Designed Saw Chains: L-M PD4 Saw Chain for cutting core veneer and fishtails; L-M PD1 Saw Chain exclusively for ripping; L-M PD2 Saw Chain exclusively for cross-cutting.

Now —a specialized unit for a specialized purpose! A tremendous time and labor saver for every plywood plant! Handles a complete lift-truck package of stock at once. Jogs, clamps and saws it through in practically one operation — all movement, including cutting, controlled by power! The L-M Saw whips through green or dry core veneer and fishtail stock *because* it's equipped with the *only* saw chain specifically designed for the purpose. Assures volume production in your plant with high speed, smooth, accurate cutting.

This new machine consists of the L-M No. 7500 Core Veneer Saw built into an integral unit with the Model 48 Core Veneer Bed. Beds are available for different sizes of core veneer sheets, **also mechanism to permit cutting bundles in multiple lengths.**

POWER CONTROLS. Your choice of manual, semi-automatic, or fully automatic power controls.

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Electric Air, Hydraulic Controlled

Standard and Custom-built Models

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Portable Electric and Gasoline Powered Chain Saws

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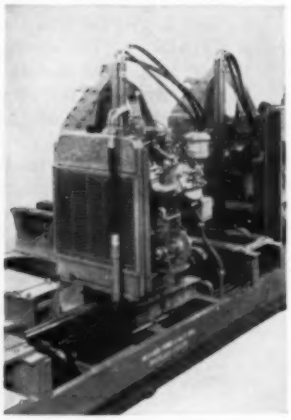
Complete, packaged units... ready to hook up and put to work.

Self-contained radiator-intercooler... solves cooling-water problems.

Foundation? Just bolt 'em down to timbers or floor.

Seven compact sizes from 146 to 686 cfm. Send for Bulletin WB-10.



This WB rides the carriage—furnishes air for dogs and set-works.

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"More logs with less roadbuilding" . . . with a Washington TRAKLOADER

"WE get more logs with our Washington Trakloader and with less roadbuilding," says Olin Smith, partner in the Huson Logging Co. (Bondurant Bros.) of Huson, Montana. On their show in the Lochsa area of Idaho, the mobile, self-powered Trakloader moves frequently to keep close to the logs, reaching out to skid in logs from corners and terrain where timber would be lost without costly road, spar tree or landing preparations.

Huson is getting a 45M to 70M daily production with the model TL-11 Trakloader and a three-man crew, taking out spruce 16 to 18 inches in diameter and running 700 to 2500 bd. ft. per tree. Moving 10 to 15 times a day and covering up to a mile of snow-covered roads, the Trakloader reaches out as far as 750 feet to skid in logs and load them onto off-highway trucks.

Add to this the reliable Trakloader performance on a 10-hour a day schedule and low 20 to 30 gallons per day fuel consumption and you can see why Huson cuts costs all ways . . . in roadbuilding, payroll, maintenance and operating expenses.

The mobility and versatility of the Trakloader will add profit to your show. Check with your local Washington dealer or field engineer or write direct to the factory. There are four models of the Trakloader for all timber operations, with boom and undercarriage adaptations for every type of logging.

WASHINGTON IRON WORKS

1500 Sixth Avenue South, Seattle 4, Wash. Elliott 1292

WASHINGTON IRON WORKS

Model 8A GEARMATIC WINCHDRUM IN ACTION

NOW a winch designed for YOUR tractor. A compact, sturdy drum of functional design which allows you to make full use of your tractor in all industries. Manufactured by a firm with years of experience in logging and industrial equipment. A minimum of moving parts, easily serviced and installed. A packaged unit for your tractor: drum, master control, all piping and bolts . . . everything necessary to attach unit on tractor. Brake instantly and automatically applies when clutch is released; perfect for arch work, hoisting, logging, construction work. One hand control of hydraulic-actuated clutch and brake. Housing has full radius edges to minimize cutting of line . . . fully enclosed for protection of all moving parts. Highest quality steel gears running in oil both with ample automatic oiler for adapter gears and bearings; insures lubrication at any angle.

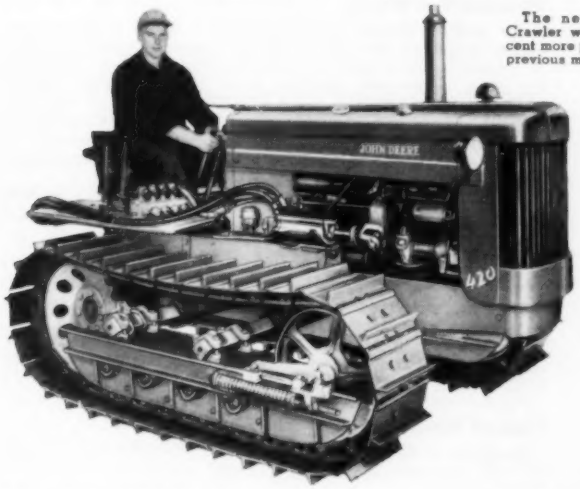
Operation of drum independent of tractor controls: in poor traction, operator can release load, then winch it up without stopping the tractor. These pictures illustrate a few of the many Model 8A Winchdrums being used in the logging industry on the John Deere 40C Tractor.

GEARMATIC CO. LTD., Vancouver, B.C., Canada

In a JOHN DEERE CRAWLER You Get SO MUCH FOR SO LITTLE!

Why buy tractors that are bigger than you need? Loggers, mill operators, and farmers who have woodlots are awakening to an important fact—there's a place for this light, economical, track-type tractor to handle a wide range of jobs. And once they own a John Deere, they wonder how they ever got along without it!

It's the compact, but amazingly powerful tractor with the simplicity and ease of handling that feature all John Deere Tractors, a tractor that will work and earn for you every month in the year. With approximately 25 h.p. on the drawbar, it's just right for hauling, clearing and piling brush, thinning, pole logging, salvage, yarding, gravel loading, culvert digging, maintaining roads and ponds, moving sawdust, pulling loaded trucks out of the mire, and a hundred and one similar jobs. Winch, bulldozer, log arch and three-way hydraulic control are available.



The new "420" Crawler with 20 per cent more power than previous model.

Little Giant of Field and Forest

- Sure-footed and stable.
- Inexpensive to buy and maintain.
- Has a world of power for its size.
- Easy to drive; comfortable to ride.

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Please send me your latest literature on the John Deere Crawler Tractor and Equipment.

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Industrial TRACTORS and Equipment

A Condensed Summary of 1955's

Major Trends & Developments

In 1955, they affected every operator, both large and small, as well as all of his workers, shareholders and customers.

The Nation's Timber Supply

At the largest meeting of professional foresters ever held anywhere, 1400 members of the Society of American Foresters gathered in Portland, Oregon, were informed by Chief Forester R. E. McArdle of the U. S. Forest Service that the country is growing timber 32 percent faster (cubic foot volume) than it is being removed. The drain in saw timber was within 3 percent of being in balance.

However, McArdle pointed out that potential demands for wood by 1957 may pose problems, that there is no excess of forest land, that there is heavy reliance on a few species, that timber quality is declining and that small ownerships are practicing the poorest forestry. Federal agencies and large private companies were exercising the most prudent management.

Company Mergers

In no other year was there such a series of company mergers, with many large firms acquiring interests in, or combining with, other large timber owning or manufacturing concerns. In multi-million dollar transactions throughout the nation, firms acquired new timberlands and manufacturing plants that further diversified their manufacturing activities and assured a more stable raw material source. These moves were actuated for taxation reasons, to effect economies in production, to further integrate utilization facilities and to consolidate timberlands into better administrative units. The pattern of the forest industries of the future will be increasingly toward large corporate ownerships, backed with ample financial reserves.

More Intensive Utilization

It was the year of the "gold-plated" log. With some isolated stumpage prices running as high as $76 a thousand board feet for Douglas fir, operators were faced with using all of their cellulose ingots or losing money. The sawmill as such, existing as a single conversion plant on one mill site, is no longer able to realize full value from logs without assists from associated utilization plants.

In the western states, an increasing number of sawmills added green veneer or plywood plants to their manufacturing plants. Western hardwoods were recognized as important raw material for lumber and pulp. More chippers were installed. The hardboard, particleboard and flakeboard industry expanded, with still more plants in the planning stage. More kraft pulp mills were announced.

There was an increasing number of "weddings" between formerly competitive products, such as kraft paper and veneer, hardboard faces on plywood core stock and plastics over plywood core stock. A "paste-patching" system for improving plywood face stock was introduced. Composite products—combining lumber cores, veneer and resin-fiber or paper overlays—are the new look in a utilization conscious industry.

National Legislation

The two most important laws passed by Congress were the minimum wage law and Mining Law #167. The former, effective March 1, 1956, puts a $1.00 an hour floor under wages, for employers engaged in interstate commerce. Southern pine producers expect to find production costs upped from 5 to 10 percent and will turn to more mechanization and less overtime as a way out. In the western states, the law will have relatively little effect.

The mining law, the first major revision since 1872, provides for multiple use of surface resources on unpatented claims located after July 23, 1955. It places bona-fide mining on a firmer basis and will prevent exploitation of timber resources on federally controlled lands.

Labor Situation

Big labor news of the year was the merger of the American Federation of Labor and the Congress of Industrial Organizations, the two giants of the labor world, for more directed political action. The impact of the new federation upon the timber industry's two unions—the AFL's Lumber and Sawmill Workers and the CIO's International Woodworkers of America—is yet to be apprised. The wedding here seems to be on the cautious side.

In the western states, 1955 was strike-free because of the settlement made in late 1954, following the recommendations of the Governors' Fact Finding Panel, based on the issues in the 84-day shutdown in 1954. Late in 1955 conferences between employers and the unions resulted in an agreement for another wage increase and other benefits, effective about the first of 1956, guaranteeing a strike-free work period until 1957. The amounts of settlement varied between the two unions, but averaged about 9 cents an hour.

WASHO Road Report

A two year road test made in southern Idaho was completed and a summary of the findings reported. Sponsored by the Western Assoc. of State Highway Officials (WASHO), the test indicated that 4-inch surfacing on a 6-inch base would be reasonably serviceable and that paved shoulders are desirable. A heavy tandem axle load does more damage than a lighter single-axle load. Frosts and thaws do the most damage to roads, subbases are important.

Timber Cut Upped

The federal agencies administering timber lands began upping allowable annual cut in some areas as a result of reinventories of their timber resources, which now recognize higher utilization standards. The Forest Service reported an anticipated fiscal year 1956 cut of 7.25 billion board feet, a 79 percent increase since 1952. An allowable annual goal of 7.6 billion board feet, exclusive of Alaska, has been set up. During the next two or three years, that agency expects to up that figure another billion feet or more.

Access Roads

For the last three years the full authorization for forest development roads has been appropriated by Congress. The budget for fiscal year 1957 contains a similar provision. A new appropriation authorization for the next two years and possibly for the next 10 or 12 will be enacted this year. The Forest Service has a total of about 18.75 million dollars for timber access road construction, needed to harvest over mature timber.

Insects and Disease

The bug fighters could claim a temporary victory in their unceasing battle with disease and pests. The seven-year aerial spraying campaign against the budworm in Oregon and Washington has proved so successful that no spraying is recommended for 1956. Many other depradators were still nibbling away at cellulose, but not in epidemic numbers. Total epidemic infestations in the western states were down to 2.2 million acres from 7.7 million in 1954.

Demand for Wood

The predictions made by the Stanford Research Institute in its report "America's Demand for Wood", began to come true ahead of schedule. The Douglas fir plywood industry, which turned out 4.8 billion square feet in 1955, expects to reach the predicted 1975 goal of 7.5 billion square feet by 1965. Hardboard and other structural boards are showing similar trends. A booming housing market, predicted strong for 1956, will continue the demand for building products of all kinds. The pulp industry shows a prodigious growth on all fronts.

Prefabricated houses offer another outlet for lumber. In 1955 prefabs accounted for about 100,000 homes or nearly 10 percent of all new single-family housing units.

Tree Farms

The American Tree Farm System of private woodland management on tax paying forest lands gained 4,145,946 acres in 1955, a record spurt since the program was launched 15 years ago. Certified Tree Farm acreage in 40 participating states totaled 37,838,910 on January 1, 1956.

Timber Hearings

Congressmen listened for two weeks in November in northern

(Continued on page 79)

BELLWEATHER FOR FOREST industries is volume of light construction, reflected in new housing starts. 1956 promises to be a good year, will increase demand for lumber, plywood, hardboard, particle board, paper—all are obtained from the harvest of trees.

Forest Industries Pace '55 Boom

On all fronts production surpassed previous records throughout the U.S.

THE YEAR 1955 WILL GO DOWN as one of the best ever enjoyed by the forest industries. No doubt there have been years during which greater profits were chalked up by loggers or manufacturers, but by and large, across the country and for all sections of the industry, individual producers had little of which to complain.

With a few individual exceptions one would have to go back a long way to find a year during which there was so little labor trouble, and this condition was reflected in the year's production totals.

Lumber production was at record-breaking levels. It came close to 40,000,000,000 feet B. M. There would not have been this production had it not been for record-breaking consumption. The nation's consumption of lumber for 1955 was estimated by Leo Bodine, executive vice president of the National Lumber Manufacturers Association, at 42,500,000,000 feet. The significance of this is that more lumber was used than was produced so that the mills went into 1956 with low mill stocks and good order files.

IT WAS ESTIMATED that the lumber, plywood, hardboard, shingles and other products produced from trees in 1955 was worth about $19,000,000,000.

THE LUMBERMAN's annual forecast which appears on these pages, indicates production of lumber in all major areas will be about the same for 1956 as it was in 1955. Production was so high in 1955 that forecasters were inclined to be cautious. However, if production continues at first quarter levels, it could easily add up to a new high for 1956.

The forest industries are prosperous, expanding in all directions, never more vigorous and ambitious or imbued with ideas and plans for further and better utilization. While, as has been pointed out, close to 40,000,000,000 feet of lumber was produced by America's sawmills in 1955, the really important thing is that lumber, as such, is not of the importance it once was. Now we have plywood, hardboard, particle board, pulp, many special wood products, as well as the old standbys, shingles, poles, shakes, millwork, wooden boxes, pallets, etc. They all add up to what we now like to call the FOREST INDUSTRIES.

Gordon E. Kernohan, president, Canadian Institute of Timber Construction, says: Considering all factors that make for prosperity and a high level of construction activity, there is ample reason to forecast an optimistic future for the timber construction industry in 1956.

THE HARDWOOD INDUSTRY across the country for the most part enjoyed a good year.

For the third time in six years the oak flooring industry in 1955 set a new all-time output record. Executive vice president Henry H. Willins, Memphis, reported that shipments for the Southern and Appalachian regions probably would approach 1 billion 200 million board feet of hardwood flooring, about 95 percent of it oak.

Maple flooring production and demand were large all year. The maple producers look for a continuation of good business during 1956.

Space will not permit a detailed analysis of the many outstanding developments and highlights of the forest industries in 1955. But some of the more outstanding events of the year will be briefly mentioned.

CAPITAL EXPENDITURES in the forest industries: a survey made by THE LUMBERMAN indicates the forest industries are making tremendous expenditures for new plants, new machinery and equipment and betterments. From figures gathered first hand from top executives of firms across the country, representing all branches of the industry, no less than $400,000,000 and possibly as much as $500,000,000 will be spent for capital improvements by the entire industry in 1956. This, better than anything else, reflects the progressive thinking of forest industries.

LABOR. With the exception of one major work stoppage in the South, peace generally prevailed throughout the industry. This factor, of course, made possible the record-breaking production of 1955. So far as can be seen now, there is reason to believe that mills will operate without labor disturbances in 1956.

THE PLYWOOD INDUSTRY continued to expand in 1955. Production of Douglas fir plywood reached a new all-time high, almost reaching the five billion square foot level. What may be considered official forecasts indicate the 1956 production will pass the 5,500,000,000 square foot mark. And the end of Douglas fir plywood expansion is not yet in sight.

There has, until rather recently, been little incentive for the plywood manufacturer to change his technique or methods. The demand, for most of the period, exceeded production and the business has, for the most part, been profitable. There is now, due to changing conditions, including a growing scarcity of high grade "Peeler" logs, high stumpage and log costs, higher wage levels, new competition of imported veneer and panels and the huge volume of production now coming on the market, a realization that something has to be done to put plants in order to meet these new conditions.

So far not much has been done. *BUT* many producers know they have to do something. A few plans have already been revealed. Typical is the new product to be made initially by U. S. Plywood Corp., to be known as Duraply. This high-quality panel will be produced from what might be considered low grade material. Production of this new panel will result in closer utilization of the raw material. Indicative of a trend is the fact that three plywood plants in 1955 installed gas heated veneer dryers.

HARDBOARDS. This business is growing. Several new mills came into production in 1955 and more will get started in 1956. So far, most of the new plants have been in the West, but some are

Forest Industry Production and Forecast

	1954	1955	1956 Estimate
Douglas Fir			
Western Washington, Oregon, California	9,459,853,000 Ft. BM	9,600,000,000 Ft. BM	9,600,000,000 Ft. BM
British Columbia	3,925,000,000 Ft. BM	5,270,000,000 Ft. BM	5,300,000,000 Ft. BM
Western Pine			
Washington, Oregon, California, Idaho, Montana, Arizona, New Mexico	7,835,000,000 Ft. BM	8,678,000,000 Ft. BM	8,250,000,000 Ft. BM
Southern Pine			
Deep South	8,360,000,000 Ft. BM	8,750,000,000 Ft. BM	8,300,000,000 Ft. BM
Redwood	900,000,000 Ft. BM	950,000,000 Ft. BM	945,250,000 Ft. BM
Northern Hemlock and Hardwood			
Lake States		650,000,000 Ft. BM	650,000,000 Ft. BM
Douglas Fir Plywood			
Washington, Oregon, California	3,900,000,000 Sq. Ft.	4,875,000,000 Sq. Ft.	5,600,000,000 Sq. Ft.
British Columbia	550,000,000 Sq. Ft.	705,000,000 Sq. Ft.	800,000,000 Sq. Ft.
Hardboard*			
Western U. S. and British Columbia		615,000,000 Sq. Ft.	715,000,000 Sq. Ft.
Other Wood Fibre Boards		120,000,000 Sq. Ft.	150,000,000 Sq. Ft.
Red Cedar Shingles			
Western U. S. and British Columbia	5,250,000 Squares	5,300,000 Squares	5,300,000 Squares**

*Does not include Particle and Flake Boards.
**Represents 13% of the American roof and sidewall market.

Estimates of Pallets Produced And Their Dollar Value (U. S.)

Year	No. of Units	Dollar Value
1945	30,000,000	Not available
1950	23,000,000	Not available
1951	27,000,000	$ 60,750,000
1952	33,000,000	74,250,000
1953	40,000,000	100,000,000
1954	36,000,000	86,000,000
1955	43,200,000	105,408,000

Source: National Wooden Pallet Manufacturers' Assoc.

Production of Hardwood Lumber and Flooring in U. S.

Oak Lumber
M bd. ft.

1899—4,549,805	1945—2,858,347
1910—3,514,831	1947—3,192,842
1920—1,853,426	1948—3,377,516
1930—1,661,362	1949—2,518,208
1935—1,194,457	1950—3,346,749
1940—1,467,137	1951—3,562,379
1941—2,207,691	
1942—2,762,204	(No later
1943—3,037,979	figures
1944—3,291,123	available.)

Oak Flooring*

1951	987,470,000 bd. ft.
1952	957,567,000 "
1953	956,958,000 "

Maple Flooring*

1951	60,850,000 "
1952	46,550,000 "
1953	47,600,000 "

*A small percentage of other hardwood species is included, not over 5%.

Source: Oak lumber—Forest Service, Bureau of Census; flooring—National Lumber Mfrs. Assn.

Lumber Production in the United States Geographical Region, 1910-1955

Region (M bd. ft.)	1910	1920	1930	1940	1945	1950	1951	1952	1953	1954*	1955*
Northeastern	3,954,067	2,310,823	1,556,000	1,727,875	1,883,422	2,103,000	2,368,000	2,240,000	2,320,000	2,426,000	2,079,000
Lake States	5,030,106	2,414,351	1,500,000	1,015,176	923,052	1,065,000	963,000	1,279,000	1,115,000	1,165,000	1,003,000
Central & Prairie	4,751,957	3,043,964	2,030,000	2,507,986	2,321,432	2,426,000	2,190,000	2,034,000	2,134,000	2,234,000	1,913,000
South	17,432,424	15,231,862	12,080,000	12,677,790	10,876,566	13,896,000	12,818,371	12,185,000	11,730,000	12,650,000	12,682,000
West	8,849,728	12,098,800	12,192,021	13,231,299	12,117,872	18,462,000	18,891,000	19,720,000	19,931,000	19,797,000	22,884,000
TOTAL U. S.	44,500,000	34,999,800	29,358,021	31,159,126	28,122,344	37,952,000	37,204,000	37,458,000	37,230,000	37,242,000	40,561,000

Northeastern U. S. (New England; and Middle Atlantic States: Delaware, Maryland, N. J., N. Y., Pa.); **Lake States** (Mich., Minn., Wis.); **Central & Prairie** (Ill., Ind., Ky., Mo., Ohio, Tenn., W. Va., Nebr., Kan.).
South (N. C., S. C., Va., Ala., Ark., Fla., Ga., La., Miss., Okla., Texas); **West** (Wash., Ore., Cal. and Nev., Ida., Mont., Utah, Colo., Wyo., Ariz., N. M., and S. Dak.).
*Includes Lake States.
Source: Forest Service, Bureau of Census, Lumber Survey Committee.
*Regional breakdowns for '54-'55 are estimates by THE LUMBERMAN. U. S. Totals are from Lumber Survey Committee.

now underway in the East and South. The particle board development in 1955 was more pronounced than the hardboard growth.

One of the highlights of the year was the publication of the *U. S. Forest Service Timber Resources Review*. This revealed what many have known for a long time: that the old timber inventory figures used by the Forest Service were antiquated and unrealistic. The report completely exploded the old "timber scarcity" theory. It indicated that the nation's timber supply and demand are about in balance.

One major development of the year was in the field of *handling, packaging and shipping* of lumber. All signs point to the fact that more and more lumber will be strapped and shipped on open cars but well protected from the weather by paper.

After several years promotion, *new name or "use" grades were introduced* by the West Coast Lumbermen's Association instead of the old number grades.

WOODEN PALLET INDUSTRY (see FIYN, The LUMBERMAN, March 25, 1955) boomed in 1955 with an estimated sales volume in excess of $100,000,000.

WHOLE LOG BARKING AND CHIPPING activities expanded in all parts of America.

A significant development in the Pacific Northwest was the *organization of hardwood lumber manufacturers* into the Northwest Hardwood Association. Producers of hardwood lumber in Oregon, Washington and British Columbia propose through this new association to formulate uniform log and lumber grades in the hope that the chaotic conditions which have prevailed in this industry may be cleared up.

JAPANESE PLYWOOD AND VENEER continued to pour into American ports during 1955. While Japanese producers endeavored to set up export quotas, this effort is said to have had little effect. During the year the U. S. Tariff Commission refused to impose a duty on such imports. The same also applied to imports of European-made hardboard.

Due to the very brisk demand for hardboard and plywood, the heavy imports of these products did not have the depressing effect on the market that might have otherwise prevailed.

PHILIPPINE FOREST INDUSTRIES were active in 1956. Japan's veneer and plywood industry continued to take the bulk of the logs produced for export, although some came to the United States. In 1954 Japan's mills took 516,165,000 feet of the 570,798,000 feet of logs exported. The United States took 38,307,000 feet of the 55,278,000 feet of lumber exported from the Philippines.

A review of the year's activities would not be complete without telling of the big *forest industry expansion in Alaska*. Two U. S. Forest Service timber sales were consummated during the year, one to the Georgia-Pacific Plywood Co., and one to the Japanese Alaska Pulp Co., Inc. Both plan large logging, pulp mill and lumber developments. There was much actual logging expansion during the year in connection with supplying logs for the big new Ketchikan Pulp & Timber Co. pulp mill at Ketchikan.

Major Trends & Developments

(Continued from page 76)

California and western Oregon and Washington to complaints against timber sale policies of the U. S. Forest Service, the Bureau of Land Management and the Bureau of Indian Affairs. Frequent political blasts characterized some of the sessions. These hearings emphasized again that the following are needed: a federally financed mainline access road program, full allowable annual cuts, up-to-date timber inventories and a simplification of timber sale practices.

Forest Fires

A disastrous fire season in California pointed out the need for more concerted action by protection agencies. At the Western Forestry Conference held in Portland, Ore., in December, western state foresters and agencies took preliminary action in organizing a regional committee to coordinate protection efforts and carry on research in the western states.

Logging

Increased emphasis was placed on mechanization. More portable spar trees and king-size tractors were auspicious in the Douglas fir region. More rubber-tired equipment showed up. Log strapping for increased pond storage capacity continued strong. There was increased interest in light, mobile units to both yard and load as the salvage logging programs were stepped up.

Lumber Grades

The West Coast Lumbermen's Association announced a change in grading rules effective March 15, 1956. The new system substitutes names for numbers (Construction, Standard, Utility and Economy for No. 1, 2, 3 and 4, respectively).

Alaska's Growing Industry

Alaska continued active in the forest industry picture. THE LUMBERMAN prepared a series of six articles, beginning in November 1955, on different phases of this booming industry. During 1955 another sale of Forest Service timber was made to Georgia-Pacific Co., which contemplates construction of a pulp mill. Japanese interests also became active.

The Big Winter

Unseasonal weather starting early in November slowed or closed down logging operations in the western states. Snow, extreme cold and heavy floods were some of the deterrents which diminished needed log harvests.

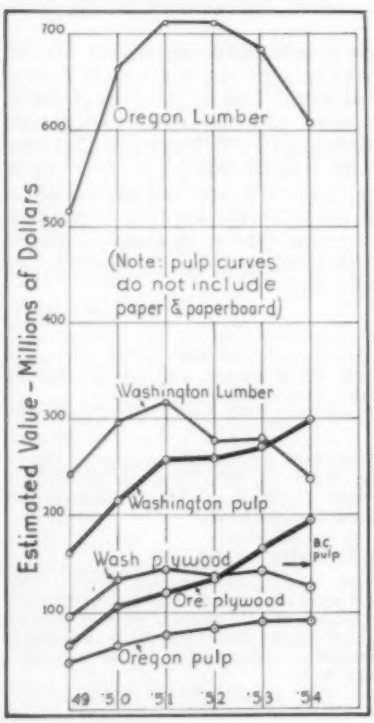
Do You Throw Away Your Log?

Answer to high stumpage and increasing costs is more complete use through integration.

By BEN S. BRYANT

A NEW TYPE OF MANUFACTURING PLANT has been born. What's more, its numbers are increasing monthly. Its progenitors are: (1) the scramble for permanent privately-owned timber supply; (2) new technology in process and products and (3) high cost of being in business.

The recent words of a millman tell the story in a nutshell. Owners of a sawmill in the 20 million bd. ft. per year class in Feb. '56 announced they would have to close the mill unless earnings substantially increased. Faced with a wage raise adding $85,000 per year to costs, the president said, "Those companies engaged in the manufacturing of pulp and plywood, together with a few in the sawmill industry, seem to be in the fortunate position of being able to absorb these increased costs. This company, we are sorry to say, is not."



Trend of Values, 1949-54, of Forest Products, Ore. & Wash.

Source: Industrial Forestry Association.

This new type of plant may take many forms. It can be any of these:

- sawmill-plywood-pulp
- plywood-sawmill-hardboard.
- sawmill-plywood-pulp.
- sawmill-green veneer-paper faced veneer.
- plywood-sawmill-particle board.
- expanded combinations of these.

Take a look at these recent developments: International Paper Co. seeking to buy Long-Bell; Crown Zellerbach going into the veneer, and eventually plywood, business; Georgia-Pacific Plywood building a new kraft paperboard mill at Toledo, Ore.; Roddiscraft, a big plywood maker and distributor, building a particle board plant; stock of companies soaring with word of merger making for better integrated timber operation; U. S. Plywood and again Crown Z announcing "Duraply" plywood, successful combination of low-grade plywood, resin-impregnated sheets and plastic into a new premium specialty.

Consider also news of plywood manufacturers paying record highs for Forest Service stumpage in Washington state; Weyerhaeuser's re-building of sawmill at Raymond, Wash., and the "death" of the company's last refuse burner, coupled with a new 400-ton daily capacity sulfite pulp mill on nearby Grays Harbor. Even the adhesives manufacturers are getting into the act, with greater capacity for resins and adhesives, both in western U.S. as well as western Canada.

WHAT IS BEHIND THESE headline developments? Where will the industry go from here? What patterns do these new trends disclose? How far can we expand with present timber reserves? Nobody knows all the answers, but we can examine the record for a hint. Note the accompanying large graph.

As the chart indicates, the plywood industry has grown most rapidly in dollar value in the past few years. New plants had to be based on new sources of timber. Regionally speaking, where the timber has been available the plywood industry has grown. Almost overnight, sources of timber in Northern California, much of it owned by ranchers, became the basis for expansion. The demand for the product continues, and southern Oregon is the scene of an intense scramble by plywood manufacturers to buy timber wherever and whenever available.

Private timber resources are insufficient, so bids on public-owned timber are breaking records.

The timber situation in Oregon forces every timberland owner into a realization of the actual market value of his holdings. High valuation of timber and sound economics require that peelable logs be converted into veneer, at least, and perhaps plywood. Small lumber manufacturers now are either peeling veneer or producing plywood as a result of transferring ownership, merging or expanding. High log prices stimulate the elimination of wood waste, maximum economic log recovery and increased production efficiency.

Integrated utilization does not end with the conversion of manufacturing residuals to particle board, hardboard or pulp chips. The volume and nature of waste resulting from a combined sawmill-plywood plant may be greater than that needed to support a board process. And still the leftovers from logging have not been considered. Probably the greatest potential for sawmill and plywood waste utilization is in southwest Oregon where sulfate pulp mills are not close enough to create a market for chippable manufacturing residuals. But the pulp industry is moving toward southwest Oregon and before long should be established in northwest California.

WHAT'S AHEAD FOR PLYWOOD? A change of attitude on the part of far sighted management toward a forestry outlook instead of timber reserve outlook is inevitable. Most plywood manufacturers think in terms of how to forestall the exhaustion of timber reserves of five, ten or twenty years supply rather than in terms of how long before the new crop can be peeled. In Washington, at least, two plants are operating entirely on young-growth timber but only a few plants which are backed by substantial timber and integrated manufacturing can

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Ben Bryant is assistant professor of forest products at the College of Forestry, University of Washington. A U. of W. grad, he holds a Doctor of Forestry from Yale. He is active in research which involves the plywood and pulp and paper industries and the chemically modified wood field. This article is a condensation of a personal study he made of the U. S. and Canadian west coast forest industries during the last year.

be considered to be on a sustained-yield basis.

In British Columbia, where nearly all commercial forests are owned by the province, the Forest Management License permits manufacturers to think in terms of sustained yield. Industry expansion must be based on efficient utilization and sound forestry practice.

Where else can the plywood industry go, assuming the continually increasing demand foreseen by the Stanford Research Institute Report to the Weyerhaeuser Timber Company? That it can stretch its veneer supply by applying technological refinements to some wasteful manufacturing practices already can be seen. It can become "married to" its own semi-dependent products—particle board, hardboard, and paper—through sandwich-type laminates. Veneer can be utilized in products other than plywood to increase the manufacturer's profit margin and justify his raw material costs.

Plywood is used primarily as a sheathing material which has substantial structural strength only when adequately supported by framing members but at least one other product will be available to the industry which would create out of veneer an entirely different type of product which possesses superior structural properties without supplementary framing. Such economic utilization of veneer is inevitable for it overshadows the economic attractiveness of waste conversion. The industry can be expected to modify continually its concept of what constitutes a peelable log and suitable species.

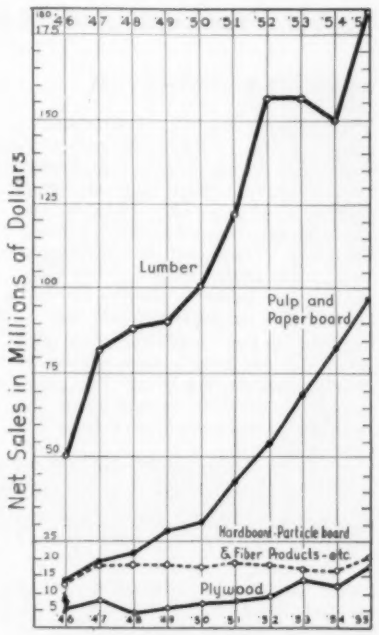
THE PULP CURVE SHOWS a steady rise in the pulp output for Oregon and Washington. Completion of expansion plans will make the curve rise sharply for both states in the next few years. This expansion—which the Stanford-Weyerhaeuser report predicts will lead to approximately twice the 1953 output by 1975—is based on further integration of the industry, especially in Oregon; on the increased use of purchased chips from sawmills and plywood plants; on intensified woods utilization through salvage logging and thinning; on the greater use of species not previously important for pulping; and on increased annual yields through intensified forest management.

Recent technological advances point to the possibility of making newsprint pulp by the attrition mill defibration of chips (semi-chemical pulp) rather than by the stone grinding of bolts of sound wood. Such an advance would make possible the expansion of the newsprint industry through purchased chips made from mill waste. A satisfactory method of removing bark from chips will greatly increase the pulp chip potential.

Among the many problems created by the integration of the forest-products industry is that which involves a shortage of technically competent personnel. As sawmills come into production of plywood or hardboard the company, being inexperienced in this new phase, employs a technical man. His adaptability soon makes him valuable in all phases of the operation.

GRADUATES OF FORESTRY SCHOOLS with a forest-products (wood technology) background are emerging as key figures in the changing industry. They are found as technical directors of integrated companies, as well as plant supervisory and technical personnel in all phases of production, especially in the newest fields of hardboard and particle board. But the shortage of such men is acute, and capable technical men of any background are difficult to find.

The technical-help shortage is felt at the level of product development and research. Company interest in these areas exceeds the supply of adequately trained men. The technical void in industry creates opportunities for adhesives and resin manufacturers to sell service—at the level of the development lab as well as at the plant—to their customers in all fields of the forest products industry. Yet in the minds of many workers, the key to the future of the industry is in the hands of those few men working in research and applied technology who will be able to develop new forest products and processes from the forest-growth potential of the West Coast. This tremendous potential will be more than sufficient for our future needs if properly stimulated and utilized.



The Trend in One Major Co.

THIS GRAPH SHOWS how dollar values of forest products of Weyerhaeuser Timber Co. have increased during the last decade. Lumber sales for this company have not followed general pattern for Pac. NW; pulp and plywood show characteristic increase.

	Sales in $ Million 1946	1955	% Incr.
Total sales	$83.2	$316.7	380%
Lumber	50.6	180.4	355%
Pulp & paperboard	13.7	96.8	721%

Net income, 1946, was $13,157,000
Net income, 1955, was $49,241,000
Source: Weyerhaeuser Timber Co.

Expenditures for Forestry Research by Major Research Fields

Major Fields	Expenditures 1926[1]	1937[2]	1953[3]	Approximate Increase in Past 25 Years in terms of Purchasing Power of 1926 Expenditures[4]
Timber Production Sciences	$ 200,000	$ 370,000	$ 1,500,000	4X
Management	420,000	2,070,000	5,800,000	8X
Protection				5X
Fire	50,000	210,000	420,000	5X
Entomology	90,000	180,000	1,050,000	7X
Pathology	140,000	270,000	1,030,000	4X
Total—Timber production.	$ 900,000	$3,100,000	$ 9,800,000	6X
Forest Products and Utilization	$1,600 000	$3,200,000	$31,000,000	11X
Forestry—Related Wildlife	10,000	80,000	2,500,000	140X
Range	50,000	340,000	1,200,000	14X
Watershed	40,000	330,000	600,000	9X
Recreation[5]	.....	22,000	300,000	...
Total	$2,600,000	$7,072,000	$45,400,000	10X

[1]Source: A National Program of Forest Research, American Tree Association, 1926.
[2]Source: Forest Research in the United States, National Research Council, 1938.
[3]Present Study.
[4]Expenditures for 1926 multiplied by 1.7 before computing increases—based on Bureau of Labor Statistics' Wholesale Price Index.
[5]No research reported in 1926.
Source: "Forestry & Related Research in North America" by Frank H. Kaufert & Wm. H. Cummings, published by Soc. of American Foresters, 1955. Reprinted with permission.

Payrolls in Oregon Counties For Lumber and Wood Products

(For 1954, in Thousands of dollars)

Western Ore.			
Benton	$ 6,853	Washington	3,931
Clackamas	9,602	Yamhill	5,698
Clatsop	5,991	Total	$279,271
Columbia	4,924		
Coos	30,885		
Curry	6,449	**Eastern Ore.**	
Douglas	41,882	Baker	$ 3,700
Hood River	2,079	Crook	7,293
Jackson	18,538	Deschutes	5,367
Josephine	9,731	Grant	4,542
Lane	52,140	Harney	3,549
Lincoln	9,960	Klamath	14,821
Linn	25,405	Sherman	.....
Marion	7,142	Lake	3,460
Multnomah	23,228	Umatilla	4,112
Polk	6,136	Union	3,437
Tillamook	8,697	Others	2,941
		Total	$ 58,686
		State total	$337,985

Source: Oregon Unemployment Compensation Commission.

Forest Products Utilization Developments of '55

By JOHN B. GRANTHAM

THE YEAR 1955 PROVIDED a milestone in the direction of improved utilization by the West's forest products industry. Many improvements, that required years of preparation and a continued strong demand for forest products, culminated in commercial production during 1955. What these recent developments imply for the future is of even greater significance.

Chipping tree length lodgepole pine **in the woods** was a new utilization development for the West. This practice is destined to spread once the problem of separating bark from the chips is solved.

LUMBER MANUFACTURERS entered the veneer or plywood business in increasing numbers thereby providing for greater integration in log use and better utilization of their logs. More log barkers were installed at sawmills, permitting greater recovery of chips for pulp or board production and providing other advantages to operations. Several mills were faced with the problem of providing sufficient fuel for steam generation—tangible evidence of the progress in residue utilization.

PLYWOOD MANUFACTURERS produced more plywood products with overlays of hardwood veneer, hardboard and resin-fiber facings. The added value of such products is significant in log utilization; it provides higher returns on logs processed and permits use of rougher or more defective logs. One manufacturer announced the development of a paste patching system to permit overlaying rougher, lower cost panels. Demand for lumber-core veneered panels grew, emphasizing increasing opportunities for composite products fabricated from common lumber, veneer, resin-fiber overlays or paper. This development is of particular interest as a new outlet for common boards.

The use of **western hardwoods,** virtually untapped, for lumber and pulp received impetus during 1955. One new plant especially designed to pulp alder went into production and at least two other pulp plants began using this wood. Hardwood lumber production was augmented by several new producers; more hardwood lumber was kiln dried; grading standards were improved. The formation of the Northwest Hardwood Association emphasized the fact that hardwood lumber production is now more than a part-time venture.

THE STRUCTURAL BOARD industry using residue materials, continued its rapid growth. One new softboard plant came into full production, five chipboard or particle board plants started production, and one plant began making a hardwood plywood with a wood particle core. At least five other particle board plants were under construction on the Pacific Coast at year's end and interest in new plants indicated an even larger number were in the planning stage.

In addition to the new alder **pulp** mill, one new kraft mill started production. The new kraft mill operates exclusively on chips from mill residues. The vast potential volume of chips available from mill and logging residues induces keen interest in other projected pulp mills. Residues from Oregon mills alone provided 407,000 dry tons of chips for pulp and board production in 1952, 555,000 tons in 1953 and 785,000 tons in 1935. This tremendous growth in residue utilization argues well for the future since even greater residue volumes await use.

Mr. Grantham is Managing Director, Oregon Forest Products Laboratory, Corvallis, Oregon.

Philippine Problem: Home Manufacture of More Products

Reported by RALPH W. DEMPSEY
Pasay City, Philippines

• Lumber producers in the Philippines are facing a critical situation brought about by conditions beyond their control.

High production costs have forced many Philippine Islands sawmills to close. Japan is near its pre-war manufacturing level. The Philippine lumber industry has been forced to sell logs to Japan. The Philippine Republic has not achieved economic stability, so there is very little government aid available.

The 1955 Calendar year shows 673,159,520 board feet of logs exported from the Philippines compared to only 60,627,564 board feet of lumber. The major lumber buyer is the United States.

To add to the problem there is no Philippine Merchant Marine. Shippers are saddled with a shipping conference composed of all flags. This results in a battle between European Lines concerned with a completely loaded ship and United States subsidized lines looking for quick loading and discharge and fast turn-around.

Japan with her own merchant marine, is not subjected to the whims of 40 or 50 shipping lines, In Japan shipping rates are competitive, resulting in a lumber freight to the United States about $12/M cheaper than the Philippine rate.

The Philippine Islands is basically agricultural and the climate tropical. Result: poor wood utilization. Japan is basically a manufacturing nation and the climate is temperate. Result: complete wood utilization.

The Japs import Philippine Mahogany logs, process them into lumber and plywood, and compete in the world markets with the wood products of the Philippines.

The Bureau of Forestry has instituted sustained yield management and selective logging policies. The advocates of "cut-and-gut" are giving Director of Forestry Amos plenty of trouble with the implementation of good forestry practices.

Two new medium sized sawmills are planned this year, one replacing a circular mill and the other, a part of an integrated wood utilization plant.

Production of Lumber In Brazil for 1953-54

• Lumber production in Brazil during 1954 (latest year for which figures are available) showed a 2.6% increase over that of 1953. Lumber exports dropped 8%. The expansion of Brazil's domestic forest products industries, along with restrictions on cutting in the important Parana pine region, will probably show the 1955 exports to be less than 1954.

Production of Lumber—In Cu. Meters

Product	1953	1954
Sawed pine	3,034,685	3,187,452
Other sawed softwood	949,638	888,612
Dressed pine	654,757	684,758
Other dressed softwood	22,818	29,971
Total softwood	4,661,898	4,790,793
Hardwoods	60,815	113,557
Total lumber	4,722,713	4,904,350

Best customers for exported Brazilian pine lumber are UK, Argentina, Uruguay and Germany. In 1954 US imported 21,243 metric tons of pinewood worth $1.3 million; in 1953 US took 35,052 tons of pine.

U. S. Lumber Production By Region, 1951 to 1955

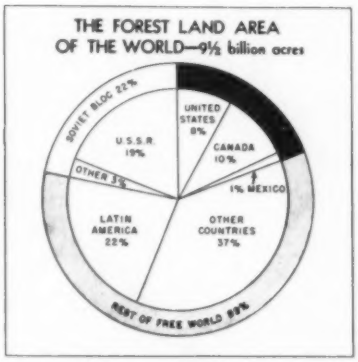
(All figures Million bd. ft.)

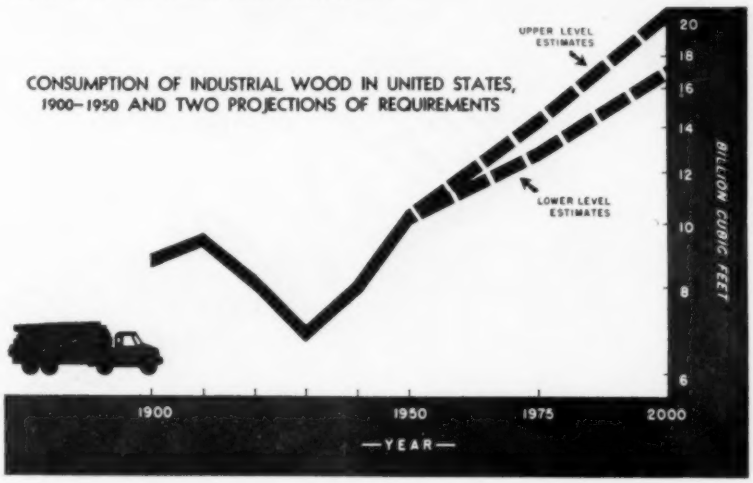
Year	Southern pine	Douglas fir	Western pine	Redwood	Other soft-woods	Total soft-woods	Southern hard-woods	Other hard-woods	Total hard-woods	Total US lumber
1950	9,939	9,972	7,687	1,770	2,160	31,528	3,797	3,577	7,374	38,902
1951	8,495	10,252	7,440	2,062	2,134	30,383	4,413	3,298	7,711	38,094
1952	8,775	9,999	7,414	2,148	2,141	30,477	4,443	3,320	7,763	38,240
1953	8,854	10,113	7,723	2,200	2,182	31,072	4,685	3,501	8,186	39,258
1954	8,386	9,350	7,867	2,050	2,139	29,792	4,264	3,186	7,450	37,242
1955*	8,772	9,789	9,776	2,569	2,288	33,194	3,910	3,457	7,367	40,561

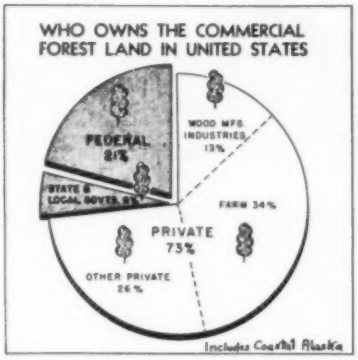
*Based on THE LUMBERMAN's estimates for the fourth quarter. First three quarter figures are estimates published by the Lumber Survey Committee reporting to Sec. of Commerce.
Source: Lumber Survey Committee

Pictorial Highlights of Timber Resource Review

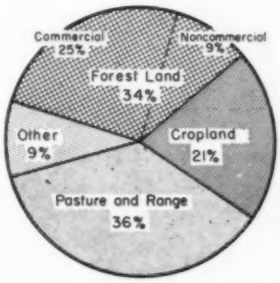
(Source: U. S. Forest Service; Timber Resource Review)



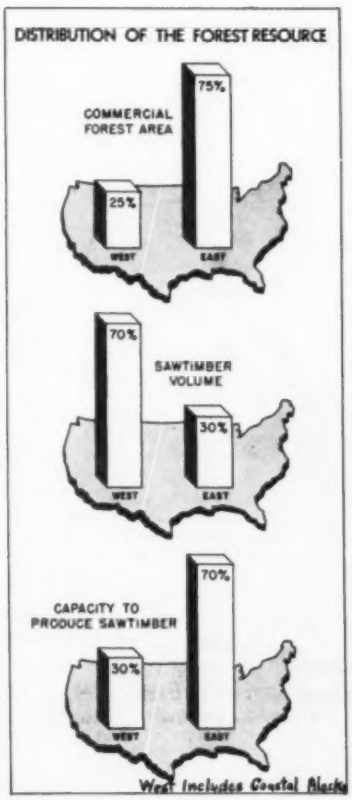




LAND AREA OF CONTINENTAL UNITED STATES AND COASTAL ALASKA BY MAJOR ECONOMIC USES



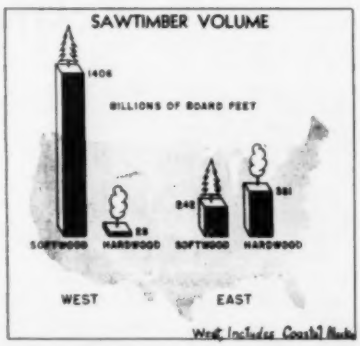
	United States	Coastal Alaska	Total
	Thousand Acres		
Forest Land	647,686	16,508	664,194
Commercial	484,340	4,269	488,609
Noncommercial	163,346	12,239	175,585
Cropland	411,148	3	411,151
Pasture and Range	693,246	91	693,337
Other	151,744	18,917	170,661
Total Land Area	1,903,824	35,519	1,939,343



NOTE: THE UPPER LEVEL estimate is based on an increased rate of consumption, which is characteristic of America during the last twenty-five years. The lower level estimate is based on a lower rate of relative consumption than had prevailed from the period 1930 to 1950.

Production & Per Capita Consumption

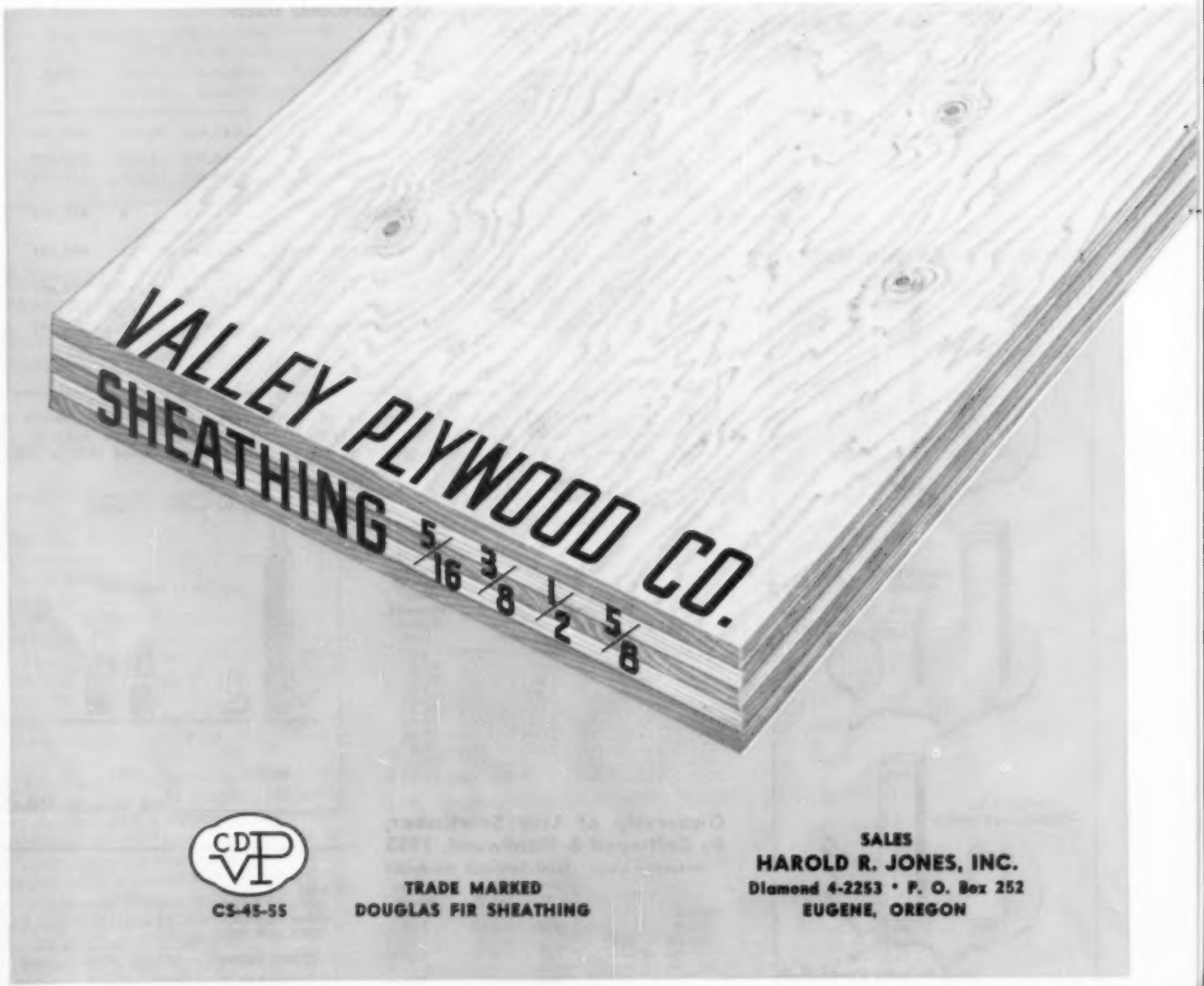
Year	United States Population	Fir Plywood Production	Per Capita Consumption of Fir Plywood, Square Feet
1946	139,893,000	1,395,000,000	9.97
1947	143,375,000	1,630,000,000	11.37
1948	146,045,000	1,871,000,000	12.81
1949	148,558,000	1,899,000,000	12.78
1950	151,240,000	2,554,000,000	16.89
1951	153,377,000	2,867,000,000	18.69
1952	154,900,000	3,049,000,000	19.68
1953	160,228,000	3,500,000,000	21.9
1954	163,200,000	3,900,000	23.3
1955	165,248,000	4,900,000	29.6



Ownership of Live Sawtimber, By Softwood & Hardwood, 1953

Ownership Class	Total	Softwood	Hardwood
	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.
Private:			
Farm	308	140	168
Forest industry and other	772	579	193
Total, private	1,080	719	361
Public:			
National forest	766	740	26
Other Federal	135	127	8
State and local	76	62	14
Total, public	977	929	48
All ownerships	2,057	1,648	409

MULTI-USE PANEL CORP.
INTERIOR-EXTERIOR-DFPA
SANDED STOCK
SALES
HAROLD R. JONES, INC.
Diamond 4-2253 • P. O. Box 252
EUGENE, OREGON


VALLEY PLYWOOD CO.
SHEATHING 5/16 3/8 1/2 5/8
CDVP
CS-45-55
TRADE MARKED
DOUGLAS FIR SHEATHING
SALES
HAROLD R. JONES, INC.
Diamond 4-2253 • P. O. Box 252
EUGENE, OREGON

APPLICATION OF FIR PLYWOOD WALL sheathing and roof decking to sement of 6000 houses in Levittown, Pa. Levitt Bros. saved 40 manhours per unit with DF over general estimated time.

Fir Plywood Industry Spurts

1956—Silver Anniversary Year will show more gains for growing industry.

THIS IS THE SILVER ANNIVERSARY Year of the Douglas Fir Plywood Industry, the lusty young giant which in a quarter of a century has even amazed itself with its prodigious but steady growth.

The Silver Anniversary follows 1955, the Golden Jubilee Year, which was marked by an all-time production record of nearly 4.9 billion square feet, according to W. E. Difford, managing director of the Douglas Fir Plywood Association, the industry's trade promotion organization.

Difford predicts that 1956 will top all previous highs. Based upon reports of new mills under construction, he estimates that 5.6 billion square feet will be the industry's output in 1956.

"We will attain by 1965, at present rate of production, the output of 7.5 billion square feet predicted by the Stanford Research Institute for 1975. That's a ten-year jump in datelines," says Difford.

THE RECORD BACKS HIM UP. During 1955 111 mills in the coastal states produced a whopping 4.875 billion feet during the anniversary year, nearly one billion feet more than in 1954 when 3.903 billion feet were produced. The industry has set new production figures each successive year beginning with 1947, the year the government lifted controls on plywood.

In addition to the 11 new plants which opened in 1955, reports indicate that 11 more are under construction for the coming year and 12 more are in the planning stage with a good portion of these probables for late in 1956.

The fortunes of the plywood industry will hinge to a certain extent on building. A U.S. Commerce and Labor Department prediction that new home starts will drop by 100,000 units from 1.3 million to 1.2 million is not generally accepted by plywood manufacturers. Many feel that the leveling off, if any, will be much slighter.

On the other side of the ledger, they predict that new homes started in 1956 will be larger. The 5-room home is no longer adequate for the millions with growing families. Next year's home will be larger. Behind this conclusion is the prediction by the same two U.S. bureaus that the dollar value of all building will jump from the present high level of $42 billion to a record $44 billion during the next 12 months. The difference in number of starts and increased dollar value is explained in the larger home concept plus step-up in commercial building such as in schools, warehouses and other large structures.

PLYWOOD IS CAPTURING A GREATER share of the building market. In 1946, the per capita consumption of plywood was something like 10 feet per American per year. In 1949, this figure was up to 12.7 feet and in 1954 it had nearly doubled the '49 figure. In 1955, based upon slightly better than 165 million residents of the United States, the per capita consumption had reached a high of 29.6 feet.

The plywood industry not only set records in 1955 but saw market stability mostly through the entire 12 months. Except for occasional and slight softening of the market, Douglas Fir Plywood Association reported a steady back order file of 500 million feet or more each week during the year and in the week ending February 26, an all-time high of 585 million was hit. New orders remained strong as 1955 came to a close and with spring buying and building not far off, the industry has every reason to feel optimistic.

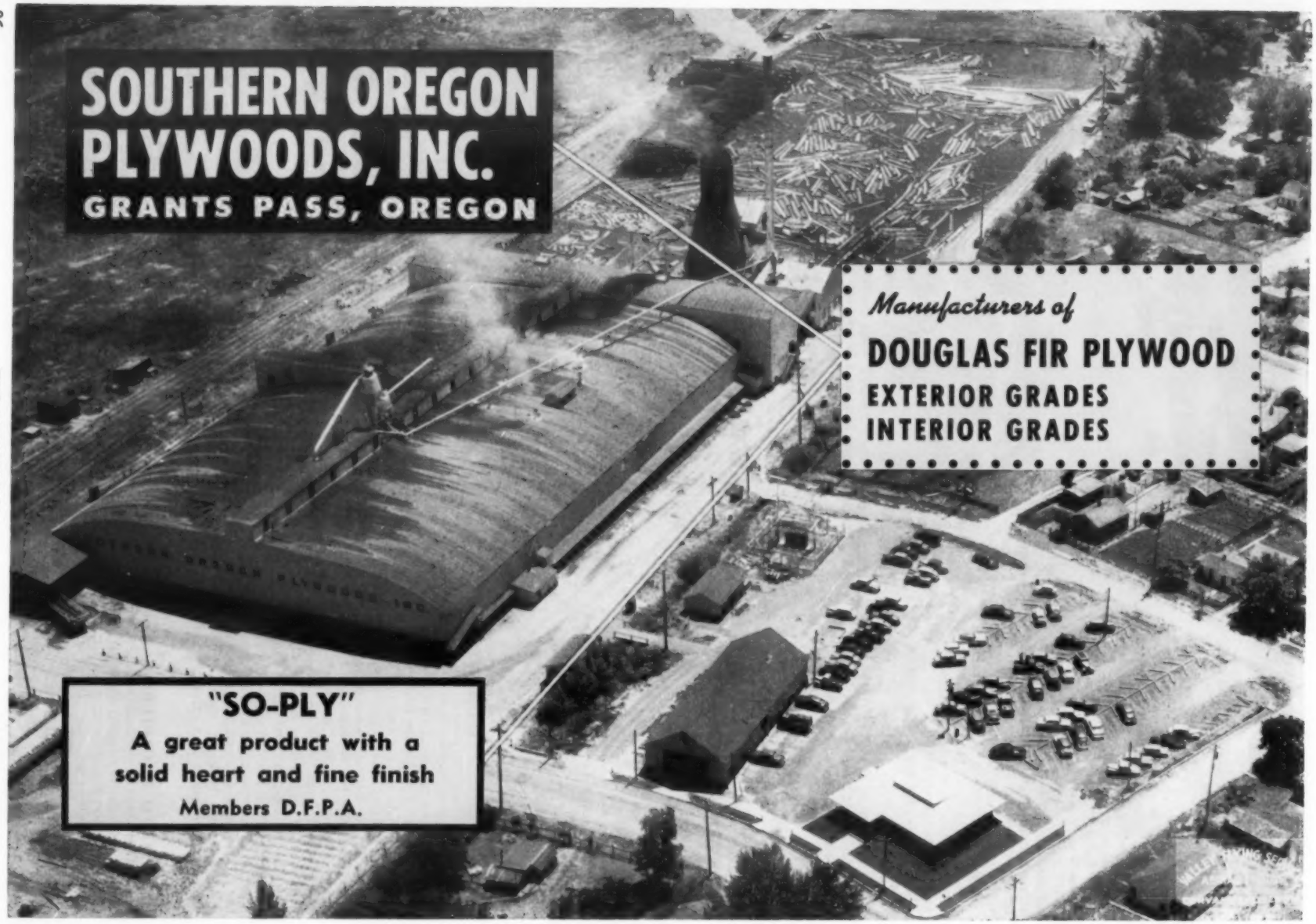
This table tells graphically highlights of the growth of the fir plywood industry:

Year	No. of Mills	Total Production
1946	33	1,395,000,000
1947	40	1,630,000,000
1948	45	1,871,000,000
1949	55	1,899,000,000
1950	68	2,554,000,000
1951	77	2,867,000,000
1952	86	3,050,000,000
1953	93	3,670,000,000
1954	100	3,904,000,000
1955	113	4,875,000,000
1956	124	5,600,000,000 (estimated)

GENERALLY, 1956 PROMOTION WILL be more closely geared to the hard facts of the plywood business. This is most evidenced in the work now going forward in the development of new plywood products. Use of other species and lower grade fir veneer, which must find outlets, is of primary consideration.

Agreement on a basic commercial standard with appropriate grade marks for softwood species other than fir has tentatively been reached. As the standard is completed, promotion behind a western softwood plywood (WSP) will be developed through DFPA.

• Will lumber core be the answer to the shortage of peeler grade logs? The practice is commonplace in eastern U. S. and in foreign countries. Already this practice has begun in the western softwood industry. One coop president believes that lumber core is an important consideration but he adds, "Let's look beyond the conventional 4x8 panel as a product of our plants." His point: for specialized markets (e. g., furniture) lumber core may be desirable but the main thing is to find a market, then make the **proper panel** for that use.


SOUTHERN OREGON
PLYWOODS, INC.
GRANTS PASS, OREGON
Manufacturers of
DOUGLAS FIR PLYWOOD
EXTERIOR GRADES
INTERIOR GRADES
"SO-PLY"
A great product with a
solid heart and fine finish
Members D.F.P.A.

Oregon Leads in N. W. Plywood Production

• Among 22 or more new plywood plants expected to start producing in the far west this year, 13 will be in Oregon, three each in Washington and California and two in Montana and one in Alberta, Canada. Their expected annual production will be about 1.2 billion square feet.

These new entries will boost mill totals probably to 67 for Oregon, 40 for Washington, 24 for California, ten for B. C. and one each for Alberta and Canada.

During 1955 plywood plants reached a new high of 125 along the west coast, as 16 new ones came into production. Three were in California, 8 in Oregon, 3 in Washington, one in Montana and one in British Columbia. The total for 1956 is expected to be 146 softwood plywood plants.

Oregon was top producer with 54 mills, up eight. Washington had 37 and California 20, each up three; British Columbia ten, up one; Montana its first, and Idaho and Alaska, one each.

PROSPECTS FOR PLANTS turning out veneer only are similar. Thirteen new units are probable, including ten in Oregon and three in California. But twice this number may be underway by the end of the year.

During the past year 23 new veneer mills started peeling, including 13 in Oregon, five in California, three in Washington and two in B. C. These boosted totals to 31 in Oregon, 18 in Calif., 13 in Wash., four in B. C. and one in Ida. In 1956 about 79 veneer plants are expected to be in operation.

The entire region turned out 6,200,000,000 square feet of wood panels, including 4,875,000,000 of Douglas fir plywood. Pine, spruce, redwood and cedar accounted for the remainder, except for 250,000,000 feet of hardwood panels.

Pine plywood production was estimated at 225 million square feet, spruce at 93 million feet, cedar at 6 million feet and redwood at 25 million.

Estimated total softwood plywood production for the west, including B. C., was 5.973 billion square feet.

IN THE WEST IN 1955, pine plywood was produced by 16 plants, redwood by 13, hemlock by 8, cedar by 2 and spruce by 13. Seventeen plants made hardwood faced panels. Alaska's plant makes spruce; Idaho's makes pine.

At least 26 new plywood and veneer plants were built by sawmill and pulp operators as a means of extending utilization. Plywood is now the big hope for other timber industries to transpose their mills to multi-product operations, add stability and gain additional revenue from each 1000 board feet of logs.

• Buffelen of Tacoma is another plywood company that was purchased by plant workers and stayed in business as a co-op. The first company was called Buffelen Manufacturing Co. and was a private corporation.

When it went coop, the name was changed to Buffelen Woodworking Co. The company operates a sawmill, panel door plant, flush door department and a plywood plant at its Tacoma site, employing 500 workers, 350 of which are shareholders. Manager Dwight Wood told THE LUMBERMAN that 135 men are engaged in pressing of hardwood plywood alone.

Production of Douglas Fir Plywood by Grades, 1944-1955, by Percent

Type Grade	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944
Interior A-A	3.71	4.02	4.85	5.99	6.31	8.47	9.52	9.76	12.12	13.27	17.62	25.46
A-B	4.36	4.33	4.48	4.87	4.58	5.30	5.71	..	..	..	..	..
A-D	29.83	30.95	32.09	33.19	35.27	38.86	38.98	37.71	34.69	36.78	40.61	36.79
B-B	1.16	1.12	1.29	1.23	1.58	1.73	3.47	..	..	..	..	..
B-D	1.43	1.24	1.38	1.56	1.71	2.11	1.91	..	..	..	..	..
C-D	24.26	25.81	24.59	21.94	14.00	14.77	15.69	13.58	12.72	16.77	8.40	10.18
Exterior A-A	1.68	1.71	2.24	2.55	2.63	2.53	3.32	3.67	4.71	6.66	9.44	8.45
A-B	1.77	1.68	1.82	1.83	2.78	2.38	2.14	..	..	..	..	..
A-C	13.66	12.18	11.99	12.31	17.24	12.45	9.68	28.41	29.04	22.70	19.83	16.21
B-B	5.30	5.58	5.49	4.92	3.32	3.24	3.24	..	..	..	..	..
B-C	.41	.33	.39	.47	.69	.32	.37	..	..	..	..	..
C-C	1.34	1.35	1.09	1.24	.88	.47	.48	1.48	.88	.59	.47	.37
Other	11.09	9.70	8.30	7.90	9.01	7.37	5.49	5.39	5.84	3.23	3.63	2.60
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Production in millions of sq. ft., 3/8" basis	4.90	3,903	3,670	3,050	2,867	2,554	1,899	1,871	1.630	1,395	1,200	1,440

Source: Douglas Fir Plywood Association.

Production of Douglas Fir Plywood by States from 1925 to 1955

(3/8" rough basis, production in millions of board feet)

Year	Total Production	Total Number Plants	OREGON			WASHINGTON			CALIFORNIA		
			Number of Plants	Production	Percent of Production	Number of Plants	Production	Percent of Production	Number of Plants	Production	Percent of Production
1925	153	12	1			11					
1930	305	17	1			16					
1935	480	17	1			16					
1938	650	21	2	70	10.75	19	580	89.25			
1939	950	23	3	117	12.28	20	833	87.72			
1940	1,200	25	5	236	19.68	20	964	80.32			
1941	1,620	31	8	497	30.71	23	1,123	69.29			
1942	1,782	31	9	552	30.98	22	1,230	69.02			
1943	1,430	30	8	478	33.43	22	952	66.57			
1944	1,440	30	8	428	29.73	22	1,012	70.27			
1945	1,200	31	9	322	26.87	22	878	73.13			
1946	1,395	33	11	432	30.97	22	963	69.03			
1947	1,630	40	13	548	33.61	25	1,062	65.16	2	20	1.23
1948	1,871	45	14	629	33.61	27	1,182	63.17	4	60	3.22
1949	1,899	55	20	709	37.34	30	1,086	57.19	5	104	5.47
1950	2,554	67	25	1,040	40.72	33	1,339	52.42	9	175	6.86
1951	2,867	76	29	1,189	41.49	37	1,436	50.08	10	242	8.43
1952	3,050	85	36	1,346	44.15	36	1,359	44.55	13	345	11.30
1953	3,670	92	42	1,752	47.73	36	1,486	40.49	14	432	11.78
1954	3,825	100	47	n.a.	n.a.	36	n.a.	n.a.	17	n.a.	n.a.
1955	4,875*	111									

Source: Douglas Fir Plywood Association. *Estimated.

A PLYWOOD MEMORIAL was dedicated in the Forestry Building in Portland in June at the Golden Jubilee session of DFPA. From L.: OSCAR MASON; THOMAS J. AUTZEN; W. C. BAILEY; W. E. DIFFORD, Mayor FRED PETTERSON (Portland); CHRISTINA ANN AUTZEN.

Celebration Keynotes Golden Jubilee Year

• "You can make anything with Douglas Fir Plywood."

That was the promise made by western manufacturers of the versatile Douglas fir wood sandwich when they met last June in Portland, Ore., birthplace of the plywood industry in 1906, to commemorate their Golden Jubilee year.

Highlights of the meeting included an elaborate display of "Fifty Golden Ideas" for uses of plywood, a national TV presentation and a play "The Plywood Age".

An unprecedented collection of design ideas was unveiled at the Golden Jubilee annual meeting.

The work of five top-flight western architectural and design firms, the ideas were shown in a dramatic visual exposition at Portland's Armory, consisting of a series of high style architectural and display settings done in the grand manner.

Designed by Chris Choate, Architect, of Los Angeles, under the direction of Joseph Weston, field promotion director for DFPA, the exposition included items ranging from an abstract garden totem pole to several startling new concepts in home design and construction.

The display was organized in three sections—one summing up the importance of the industry today, the other exhibiting the Golden Ideas developed for the industry by the architectural firms, and the third suggesting future uses and markets.

New plywood products of the future shown: a material tentatively called Texture 55, a textured panel intended primarily for a ceiling panel adaptable to softwood plywood species other than fir; a corner joining idea using a molded plywood angle called a Plangle, a decorative concrete form panel, and a long-span tongue and grooved lumber core panel for exposed beam roofs.

Other show highlights: a garden storage unit, a light fixture, a space divider set, a two-level plywood ceiling; a bookcase of light, a shade scheme, a structural system for walls and roofs for a vacation home.

Throughout the rest of 1955, a traveling "circus" sponsored by the DFPA toured the western states. At every community in which it stopped, citizens were shown the many ways in which plywood could help improve their standard of living.

One of EEMCO custom built presses for hardboard production.

ERIE ENGINE & MFG. CO.

HEAVY DUTY PRESSES

. . . for the production of
HARDBOARD • PLYWOOD • VENEER

Quick Delivery — Sturdy Design

EEMCO Hydraulic Presses are built to suit the customer's particular requirements. They can be adapted to existing facilities or furnished with manual or automatically controlled individual pumping units. Loading and unloading devices are optional.

EEMCO heavy duty Presses are built by expert craftsmen to give unexcelled performance. Our qualified engineers will gladly assist in solving your "Press problems." Write, stating particulars, for complete details.

EEMCO ERIE ENGINE & MFG. CO.
955 East 12th Street, ERIE, PA.

Also builders of Presses and Mills for Rubber and Plastics Industries —complete installations for Reinforced Fiberglass molding.

The ARMOR FAMILY is still growing!

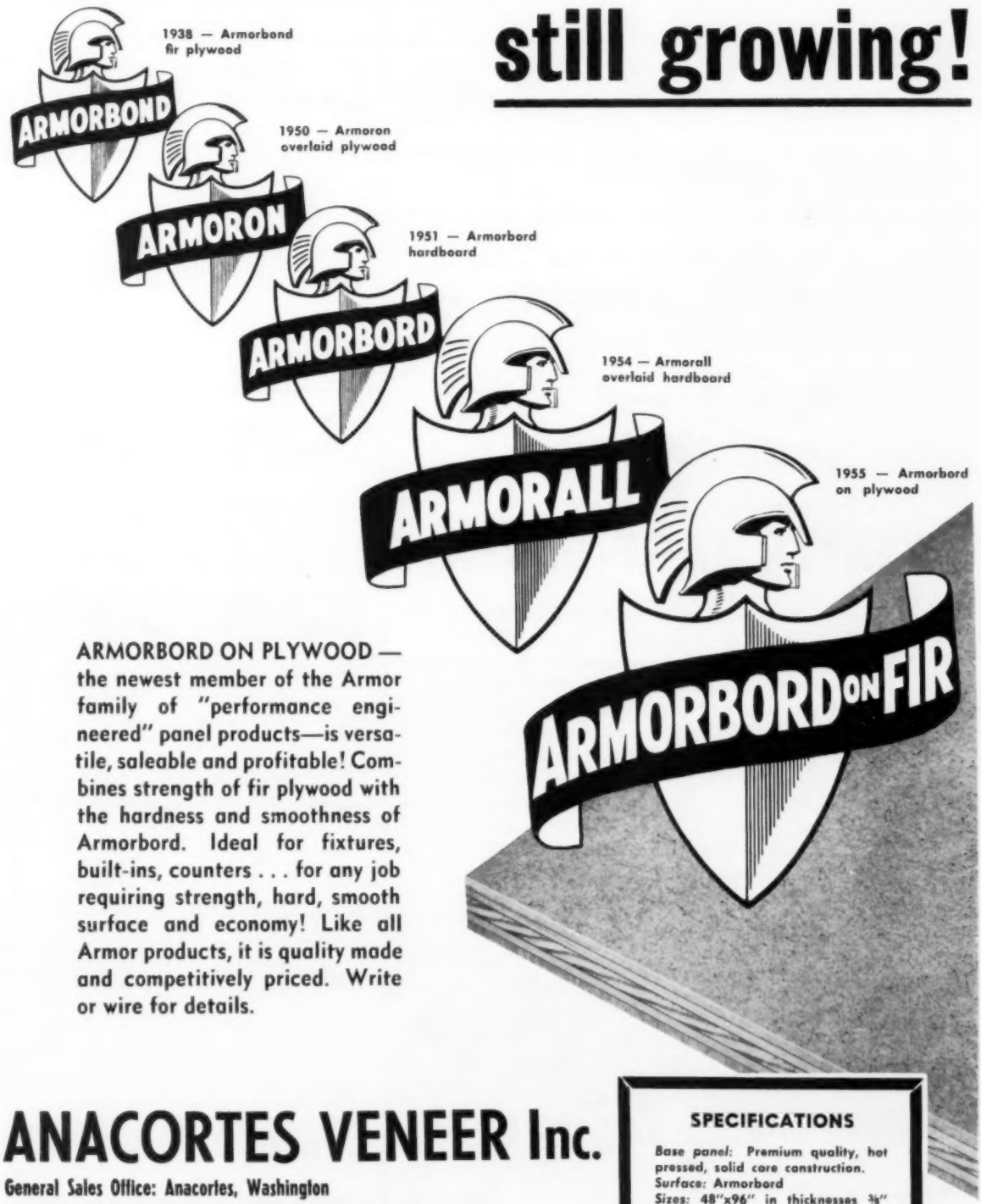
1938 — Armorbond fir plywood

1950 — Armoron overlaid plywood

1951 — Armorbord hardboard

1954 — Armorall overlaid hardboard

1955 — Armorbord on plywood



ARMORBORD ON PLYWOOD — the newest member of the Armor family of "performance engineered" panel products—is versatile, saleable and profitable! Combines strength of fir plywood with the hardness and smoothness of Armorbord. Ideal for fixtures, built-ins, counters . . . for any job requiring strength, hard, smooth surface and economy! Like all Armor products, it is quality made and competitively priced. Write or wire for details.

ANACORTES VENEER Inc.

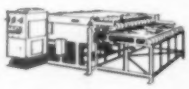
General Sales Office: Anacortes, Washington

Midwest Sales Office: 13375 Watertown Plank Rd., Elm Grove, Wis.

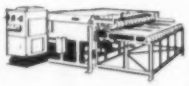
Eastern Sales Office: 650 Industrial Office Bldg., Newark, N. J.

SPECIFICATIONS

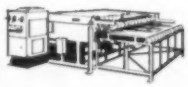
Base panel: Premium quality, hot pressed, solid core construction.
Surface: Armorbord
Sizes: 48"x96" in thicknesses 3/8" through 3/4"



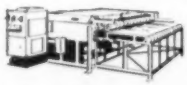
Anacortes Veneer, Inc.
Anacortes, Wash.
One 10′ Unit (On Order)



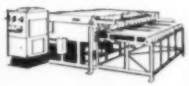
Arcata Plywood Corp.
Arcata, Calif.
One 8′ Unit



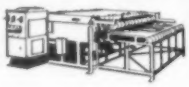
Bate Lumber Co.
Merlin, Ore.
One 8′ Unit (On Order)



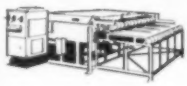
B. C. Forest Products, Ltd.
Victoria, B. C.
One 8′ Unit (On Order)



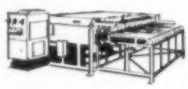
Bohemia Lumber Co.
Culp Creek, Ore.
One 8′ Unit (On Order)



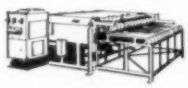
Bradley Plywood Corp.
Savannah, Ga.
One 8′ Unit



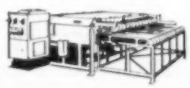
Brookings Plywood Corp.
Brookings, Ore.
One 8′ Unit (On Order)



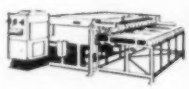
Canadian Forest Products, Ltd.
New Westminster, B. C.
One 8′ Unit



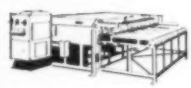
Cascades Plywood Corp.
Lebanon, Ore.
One 10′ Unit



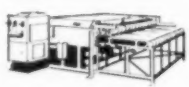
Commonwealth-New Guinea Timbers, Ltd.
Sydney-Lae, N. G.
One 4′ Unit



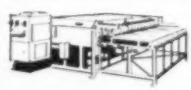
Cypress Mining Co.
(Timber Products Div.)
Medford, Ore.
One 8′ Unit (On Order)



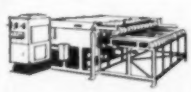
Diamond Lumber Co.
Tillamook, Ore.
One 8′ Unit



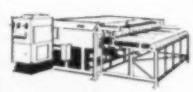
Harbor Plywood Corp.
Aberdeen, Wash.
One 8′ Unit



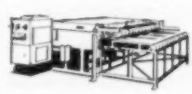
M & M Wood Working Co
Portland and Lyons, Ore.
One 8′, One 10′ Unit



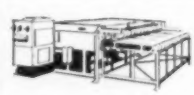
MacMillan & Bloedel, Ltd.
Alberni and Vancouver, B. C.
One 8′, One 10′ Unit
One 8′, One 10′ (On Order)



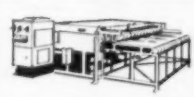
Mutual Plywood Corp.
Eureka, Calif.
One 8′ Unit



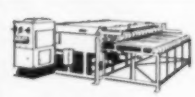
Nickey Brothers, Inc.
Memphis, Tenn.
One 4′, One 8′ Unit



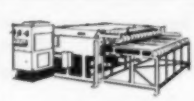
Northern California Plywood Co.
Crescent City, Calif.
One 8′ Unit



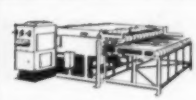
Roseburg Lumber Co.
Dillard, Ore.
One 8′, One 10′ Unit



Sooke Lake Lumber, Ltd.
Victoria, B. C.
One 8′ Unit



Southern Oregon Plywood Corp.
Grants Pass, Ore.
One 10′ Unit



Western Plywood Co., Ltd.
Vancouver, B. C.
One 8′ Unit

Leading Names In The

PLYWOOD INDUSTRY

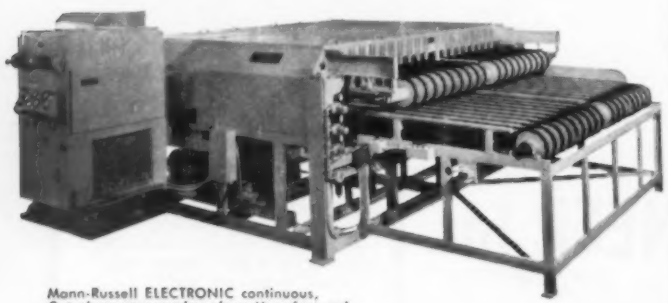
Rely On The

Mann-Russell Electronic

Continuous, Flat-Plane

VENEER EDGE-GLUER

MORE and more, plywood manufacturers are recognizing the distinct advantages of the Mann-Russell ELECTRONIC veneer edge-gluer. With a Mann-Russell unit—engineered to meet modern plywood mill requirements—you get all these plus-factors: greater output per man-hour . . . . lowest power consumption for any continuous gluing process . . . increased veneer recovery from the available log supply. It will pay you to investigate the Mann-Russell system thoroughly—now. Write, wire, or call collect: MANN-RUSSELL ELECTRONICS (Northwest Syndicate, Inc.), South 23rd and Pacific Ave., Tacoma 2, Washington, FUlton 1593.



Mann-Russell ELECTRONIC continuous, flat-plane veneer edge-gluer. Manufactured in 3 standard sizes: 4′, with a 50″ maximum stock length; 8′, with a 103″ maximum stock length; 10′, with a 126″ maximum stock length.

(Five additional Mann-Russell Veneer Edge-gluers currently on order)

Technical Advancements Secure Quality and Saving

DURING THE PAST YEAR DFPA's wood technologists have delved into such problems as applying subflooring and roof decking over supports spaced 48" o.c. and have explored the factors affecting the face checking of plywood.

Cooperative programs with other companies amount to still another phase of the DFPA's technical department. Joint laboratory testing programs with the Minnesota Mining & Manufacturing Company and the Asbestos-Cement Products Association have produced results beneficial to all concerned.

Tests on a proposed new type of floor and roof construction involving fir plywood panels on supports spaced 48" o.c. were conducted by chief engineer David Countryman, which should bring new construction and cost advantages to builders. Conventional plywood floor and roof sheathing normally ranges in thickness up to 5/8" used on supports spaced up to 24".

The plywood roof diaphragm strength provides an exceptionally effective bracing system against horizontal forces, while the increased panel thickness gives more resistance to transmission of sound and heat.

The floor system, in which the girders may be framed into the foundation, permits a decrease in wall height of a foot or more. Since walls may be carried directly on foundation, difficulties caused by joist shrinkage can be eliminated. Further, panels can be easily removed prior to finish floor application for access to the crawl space by heating and plumbing tradesmen. If a basement is used, the system provides an attractive beam ceiling.

TESTS COMPLETED BY Countryman revealed that 1" plywood with edges blocked was entirely adequate structurally as a subfloor on supports spaced 48" o.c.; also that 3/4" plywood was suitable as roof sheathing on 48" o.c. spans.

Along the product improvement line, T. E. Batey, Jr., technologist for the DFPA, conducted a study on the factors influencing face checking during 1955.

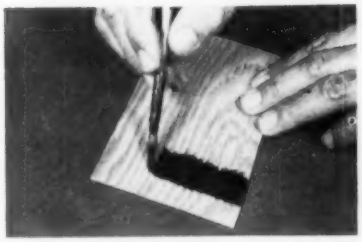
The major factors affecting face checking significantly were grain type, quality of peel, moisture content of veneer at time of pressing and water-repellent treatment of finished panels.

The very strong difference in effects on checking displayed by different grain types indicated the desirability of selecting finer grained faces where minimum checking is required.

Quality of peel was also found to be a major factor in face checking to such a point that producers are urged to give careful study to their peeling technique. The important factor of quality of peel as it effects face checking is the proportion of the thickness of the veneer between the ends of the lathe checks and the tight side of the piece. A loose peeled face, when glued normally with the tight side out and sanded, may display exposed lathe checks at the time of manufacture. The greater the proportion of solid wood remaining between the lathe checks and the surface, the more resistance there will be to checking and the less influence the existing lathe checks will have as zones of weakness.

IMPROVEMENT IN CHECKING performance afforded by the use of veneer of lower moisture content in cold pressed plywood demonstrated the importance of adequate veneer drying, particularly where other factors conducive to checking, such as coarse grain and loose peel, were present. The results showed that a relatively small difference in veneer

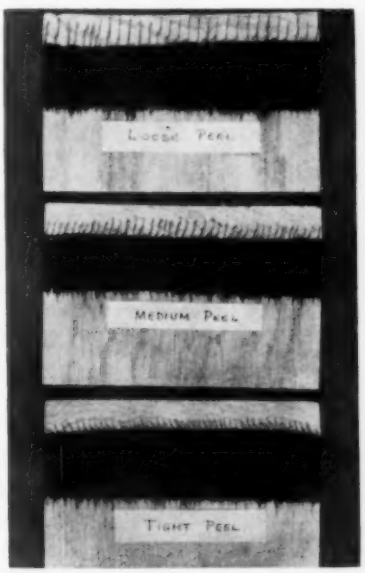
(Continued on page 92)



TO DETERMINE MEASURE of severity of lathe checking, veneer is stained and bevel sanded. First step is applying alcohol soluble stain.

SECOND STEP in determining the degree of lathe checking is to saw through the stained area of the veneer preparatory to sanding.

THIRD STEP is to bevel sawn area. Specimen is sanded so that bevel extends completely through the piece from one face to the other.



STAINED CUT AND bevel sanded veneer samples show 3 qualities of peel, as shown by depth of lathe checks. Peel quality is measured by thickness lathe checks extend thru.

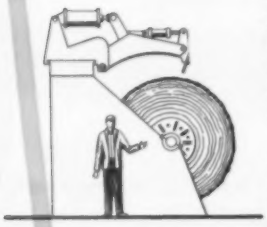
FLOOR FRAMING on this 28-ft. x 48-ft. full-basement residence consisted of double 2x10 girders generally spaced 48-in. o.c., spanning 14 feet, and bearing on center girder consisting of four 2x10's. One-inch panels were edge-blocked with 2x4's spaced 48-in. o.c.

EDERER "JOB ENGINEERING"
HELPS EXPAND PRODUCTION IN AN EXPANDING INDUSTRY

EDERER
BARKERS

remove ONLY the bark—regardless of peeler shape or contour

EDERER'S two newly "job-engineered" barkers—floor mounted or overhead models—use a combination of scraper and rosser heads which will handle peelers of almost any shape or contour. The scraper head removes ONLY the bark, assuring the most veneer from every peeler. The rosser head is used to remove burls and on "buckskin" logs.



Both barkers will chuck peelers in one-tenth the time of ordinary barkers. Both are available with an automatic loading device—and both operate from one set of controls, located wherever is convenient for the operator.

A note on your letterhead will bring you full information about an overhead or floor mounted barker for *your* operation.

KEEP AMERICA GREEN

295V56

EDERER ENGINEERING COMPANY
2933 First Avenue South
Seattle 4, Washington
EXPORT DIVISION:
301 Clay Street, San Francisco 11, California

EDERER
PLYWOOD EQUIPMENT

SINCE 1901 "JOB-ENGINEERING" CRANES AND HEAVY EQUIPMENT

Technical Advancements

(Continued from page 91)

moisture content has a **significant** effect on checking.

Application of a water-repellent treatment immediately after manufacture of the plywood was shown to reduce face checking considerably. Treated plywood will not gain or lose moisture as rapidly as will untreated stock, and under normal fluctuations of climate will not vary as widely in moisture content as will untreated material.

A cooperative project has been carried on by Thomas A. Moran of the technical department of the Douglas Fir Plywood Association with the Minnesota Mining & Manufacturing Company, manufacturers of Scotchlite, the material used extensively throughout the country to reflectorize highway signs.

It is known that good, durable highway signs could be produced from plywood and overlaid plywood base materials far surpassing performances of other metal materials. However, questions had arisen as to the best methods for preparing plywood base materials for Scotchlite applications.

ALL SAMPLES WERE PREPARED for Scotchlite application at the DFPA laboratory and sent to the 3M laboratory at St. Paul for actual application of the Scotchlite.

Moran reports that after the first six months 3M was encouraged by the satisfactory weathering of the Scotchlite on the samples of plywood and overlaid plywood. Also, they were particularly impressed with the durability of Scotchlite applied directly to the surface of the overlaid.

The Asbestos-Cement Products Association recently published an application manual setting forth nailing specifications and recommendations relating to use of their products over plywood sheathing. Full credit was given to DFPA research.

Organizations Performing Research in Plywood

DIVISION OF DERIVED PRODUCTS
Forest Products Laboratory
North Walnut Street
Madison 5, Wis.

FORESTRY BRANCH
Forest Products Laboratories Division
Canada Dept. of Northern Affairs and Natural Resources
Ottawa, Ontario

FOREST PRODUCTS LABORATORY
Forestry Branch, Forest Products Divisions
University of British Columbia
Vancouver, B. C.

OREGON FOREST PRODUCTS LABORATORY
17th and May Streets
Corvallis, Oregon

PLYWOOD RESEARCH FOUNDATION
620 E. 26th
Tacoma 4, Wash.

UNIVERSITY OF WASHINGTON
College of Forestry
Forest Products Laboratory
Anderson Hall
Seattle, Wash.

WASHINGTON STATE INSTITUTE OF TECHNOLOGY
Division of Industrial Research, Wood Technology Section
Pullman, Washington

Ruben de Mello is president of Industrias Madeirit S. A., the major plywood producer in Brazil. The corrugated plywood mentioned in Mr. de Mello's report received widespread publicity in the U.S. when it was first developed several years ago.

Sao Paulo Reports On Plywood Production

Reported from Sao Paulo by RUBEN DE MELLO

• Industrial Madeirit S. A., are manufacturers of plywood and have two factories. The first is in Guarapuava, State of Parana where all veneers necessary for the Sao Paulo plant are produced. In the Sao Paulo plant are manufactured various kinds of plywood, both interior and exterior, used for concrete moulds, construction of boats, furniture, pre-fabricated houses, roofings, decorative purposes, etc.

Water-proof plywood is a specialty. The firm was one of the first to introduce the Tego Film glue in this country, actually imported from the United States but soon to be produced here. A new factory is being built for this purpose, the first to produce this glue in South America.

The most important product made, however, is "Corrugated Plywood", a material patented in the U. S. and in many other countries. This material is used for roofing purposes and has a large consumption in Brazil.

The company also manufactures another product named "Lambris Madeirit", similar to the American "Flexwood", which is produced with various kinds of Brazilian woods and is used for paneling purposes. (Editor's note: Brazil is one of the world's leading plywood producers and is making steady gains in both volume of production and in technology.)

Production of Plywood And Veneer in Brazil

• Veneer and plywood total for Brazil for 1954 was up a little over 1953. The following production figures are given in cubic meters:

	1953	1954
Veneer: Pine	95,885	82,325
Other species	29,974	21,630
Plywood: Pine	60,531	68,168
Other species	18,947	25,169
Totals—		
Veneer	125,859	186,280
Plywood	79,478	93,337

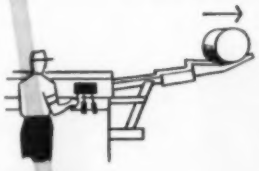
EDERER "JOB ENGINEERING"

HELPS EXPAND PRODUCTION IN AN EXPANDING INDUSTRY

EDERER LATHE CHARGERS

...floor or overhead models will load a lathe in 18 seconds

EDERER lathe chargers are "job-engineered" to pick up a peeler—pre-center it to lathe chucks—and move it forward to exact chucking position. In a recent five-hour clocked operation the average chucking time was only 18 seconds after peeler knife was retracted! Even faster models are available if your production schedule requires it.



Both overhead and floor mounted chargers are hydraulically operated from one set of controls, located for the operator's convenience. With the two models to choose from, you can have a charger to fit your exact requirements. A simpler adaptation of these chargers can be engineered to load your barker too.

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Plywood

Research Stresses Slicing

U. S. Forest Products Laboratory conducts work on cutting techniques.

By JOHN F. LUTZ

RECENT RESEARCH AT THE U.S. Forest Products Laboratory in Madison, Wis., indicates that the veneer slicer may prove to be an effective tool in expanding the supplies of veneer logs required by the plywood industry.

With industry needs in mind, the Laboratory's research emphasizes the utilization of species now considered unsuitable for plywood, and cutting techniques by which smaller and defective logs can be utilized. In its research the Laboratory evaluates each new species on the slicer and the lathe in comprehensive investigations that cover all phases of manufacture, from heating of the log to performance tests on the final plywood product.

For the past 2 years the Laboratory has conducted tests on a specially designed veneer slicer that combines precision cutting and high speed. A number of western softwoods, such as western larch, western red cedar, and Douglas fir have been cut.

Utilization of white-pocket Douglas fir logs, not only for sheathing plywood but for high-grade paneling, has been given intensive study recently. Research in rotary cutting is also being continued.

Mr. Lutz is a technologist at the Forest Products Laboratory, Forest Service, U. S. Department of Agriculture. The Laboratory is maintained at Madison, Wis., in cooperation with the University of Wisconsin.

THE TESTS INDICATE that the slicer will produce high-grade veneer from many species that do not cut well on the lathe. Furthermore, the slicer can be used on logs that are too small for rotary cutting, such as second-growth timber of some species. Defective timber can be salvaged, because the flitches can be sawed to eliminate splits, ring shake, or other defects, and the grain can be oriented to get the best possible cutting and intrinsic value out of the material.

Other species that have been sliced experimentally include yellow-poplar, southern yellow pine, black oak, yellow birch, and beech.

Much of the slicing work is in preliminary stages and research is being pushed on such factors as cutting techniques, including refinement of machine adjustments.

Recent experiments on cutting techniques have resulted in the development of two simple instruments that insure accurate setting of the nosebar and knife angle, thereby helping operators to maintain uniform cutting conditions for the production of high-quality veneer. Two such instruments have been put on the market by a commercial supplier.

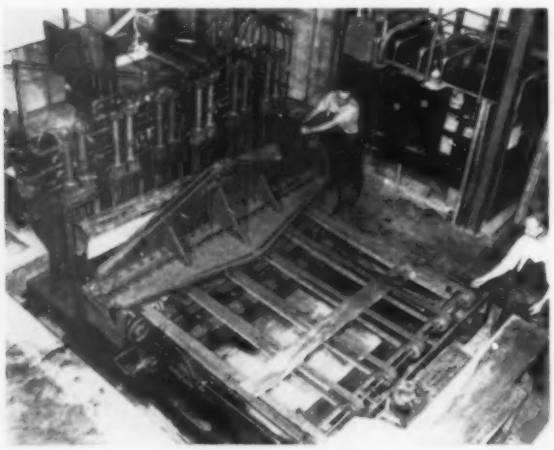
Estimated production of 5½ billion square feet of softwood plywood and 1½ billion square feet of hardwood plywood in 1955 points out the need of finding broader sources of veneer logs if these towering production peaks are to be maintained or improved upon.

AN IMPORTANT PHASE of the Laboratory's current research involves fundamental studies of veneer drying to determine methods of reducing degrade and producing a better final product. Preliminary results indicate that a steaming treatment during drying will improve moisture uniformity and reduce drying stresses. Although still exploratory, this work gives promise of reducing drying defects.

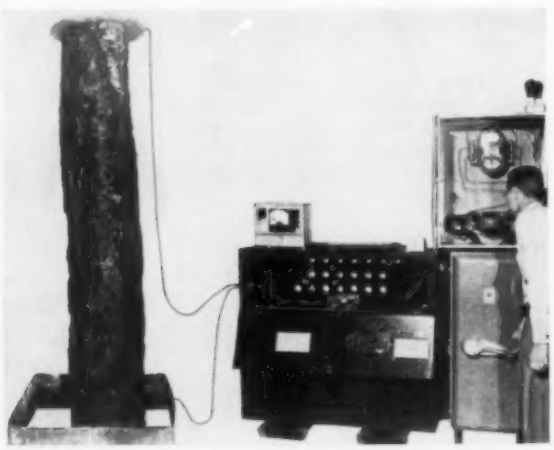
Research under way also is aimed at the control of end waviness during drying of hardwood veneers, such as sweetgum, beech, birch, maple, elm, and tupelo. Tests have shown that simply lapping the ends of the veneer sheets or adding moisture to the ends of the sheets or adding moisture to the ends of the sheets during drying effectively reduces end waviness.

Research has also continued on the Laboratory's fast method of heating veneer logs electrically instead of in water or steam. In a recent demonstration, two 8-foot flitches of walnut, each about 14 by 7 inches in cross section, were uniformly heated to a temperature of 160° F. in 12 minutes.

Much of the work on electric heating is still in the experimental stage, but there have been very favorable results in tests with yellow birch, oak, water tupelo, and other species. Because of the ease and rapidity with which large logs can be heated by the electric method, it may become practical to heat large softwood logs that are now cut without heating treatment. This would be helpful in producing smoother and firmer veneer, particularly from coarse-textured logs that are now coming into West Coast mills in quantity.



FAST 8-FOOT VENEER slicer at U.S.F.P. Laboratory. Research indicates slicers hold promise in handling small logs. (USFS photos.)



COMPOSITE PHOTO shows 8-ft. yellow birch log being electrically heated. High voltage transformer, center; controls at the right.

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Industrial Uses Increase

Plywood finds many new outlets in the nation's factories and industries

ALTHOUGH MORE THAN HALF of fir plywood's production every year continues to go into building, one of the biggest market advances in recent years has been in the industrial field.

Today, more than 25 per cent of plywood production goes into industry.

This new movement can undoubtedly be attributed to plywood's versatility and durability which every day finds it replacing many time-honored materials. In every instance, plywood has proved its mettle as a better product to do a better job.

A random rundown of some typical examples of industrial uses for fir plywood would include a list such as this: box car rehabilitation, mockups of new automobiles, high-speed jet planes and rugged pieces of farm machinery; tank baffles for a water purification system; packaging for the U.S. Navy's precious periscope; an economical gate to eliminate costly in-transit damage of rugs and floor coverings; boxes to keep dry ice from vaporizing enroute to customers; a new design in freight car construction; for progressive forming of aircraft parts; and, lastly, pallets, one of the oldest wood products of all times.

Box Car Rehabilitation

Great Northern Railway Co. is basing a new box car repair and rehabilitation system on fir plywood as a result of tests they have conducted since 1944, when Great Northern moved to fir plywood, building more than 2,000 cars with the versatile panels over a three year period. Then they reverted to steel when it became more readily available. But in 1952 the company was faced with renovating some 8,000 cars of 100,000 pound capacity purchased between 1937 and 1942.

A field examination undertaken of the road's 1944 plywood cars revealed that plywood not only was more durable but maintained its original appearance much longer.

The first 500 cars to be repaired utilized vertical plywood side sheathing. A short time later another repair program was undertaken for comparison purposes using horizontal plywood sheathing. Results indicate the horizontal method—using 8 over-size panels—will be used for the balance of the work.

Horizontal panels currently in use are a special factory order of 5-ply A-C grade with toxic water-repellent, water-dip treatment. They measure 5′ ⅜″ x 16′ 2⅛″. Approximate material costs per car runs about $127, slightly above the cost for conventional siding. Reduced labor charges and increased durability more than even the score however. Total repair cost per car, including labor, is about $1300.

Plywood Mockups

Plywood mockups are lifelike machines used by various industries as part of preliminary testing before expensive tools and dyes are made to produce the real thing. Large concerns are now using them to iron out the many design bugs which would be costly to alter after permanent production machinery and tools have been made.

In the automobile industry, Ford Motor Company, for one, uses 50,000 feet of fir plywood each year.

Aircraft engineers likewise have found it profitable to take a look at a mockup before going ahead with costly assembly line production of new models. Boeing Airplane Company has been using plywood in mockups for years. On the new 707 jet tanker-transport, now in production for both commercial and military use, Boeing used more than 8,000 feet of fir plywood on a "stand-in."

Another firm quick to see the advantage of mockups as part of preliminary testing was the Caterpillar Company of Peoria, Ill. One important project was that of its D-9 tractor. They used several plywood prototypes during ten years of research in testing of this new tractor.

DF PLYWOOD on Great Northern RR box cars is treated with moisture repellant spray.

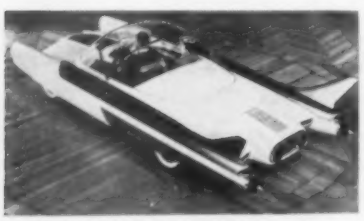
PLYSCORD GATE secures heavy rolls of rugs on box car haul. Bird & Son developed idea.

Plywood Tank Baffles

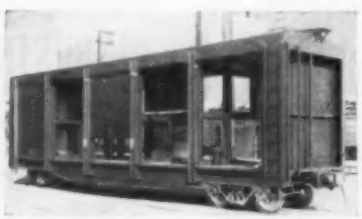
Nine years ago one of the Southeast's biggest industrial firms selected plywood in development of a river water purification system. The application consisted of baffles, troughs, flumes and partitions in a vast concrete water settling tank. The installation required more than three carloads of Plyshield.

Examination of the plywood after virtually constant immersion over a 9-year period has shown no delamination. Although the nature of the

(Continued on page 99)



FIR PLYWOOD MOCKUP supports clay finish for Ford's FX-Atmos—"car of the future".



UNIT LOAD CAR has styrofoam sandwich panels, fir ply, on sides, faced with Fiberglas.

PLYWOOD FORMS are used by Ryan Aeronautical to make progressive forming aircraft parts.

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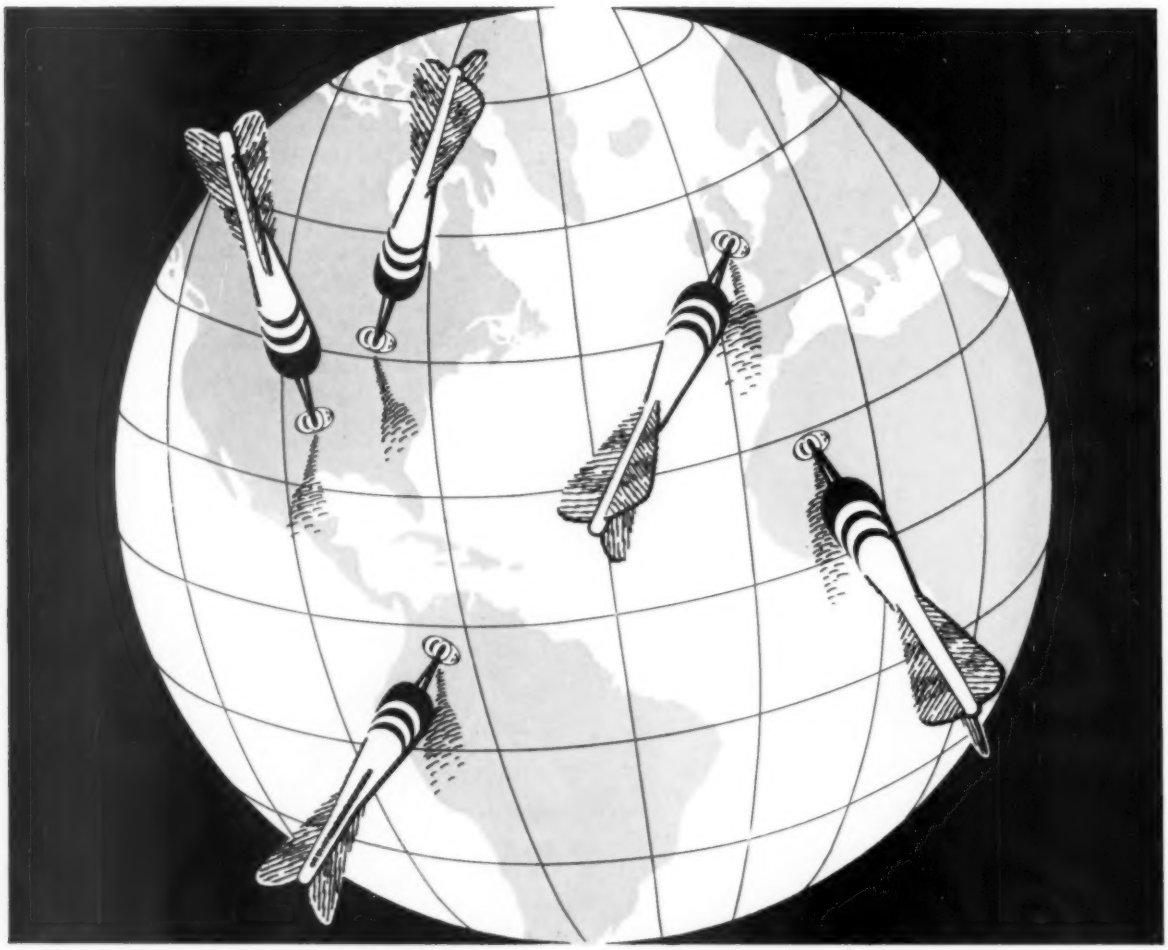

A DART GAME for Veneer Producers

Take five darts and throw them at a map of the world. It would be pretty hard to miss hitting at least one area where veneer is cut. The ones above landed in Africa, England, South America and the United States. The chances are that a Coe lathe is busily at work not far from each spot.

Wherever veneer is cut, whether it be birch, cativo, fir, gum, limba, mahogany or most any other species, you will find the Coe name on the lathes, clippers, dryers and knife grinders being used. This world-wide acceptance comes from a sound basic design adapted to fit the particular requirements of each individual plant.

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Industrial Uses Increase

(Continued from page 96)

application tends to foster decay, examination of the plywood showed that it had weathered this hazard "very nicely." Metal fastenings, corner brackets and other parts were badly corroded.

In view of the re-design and the occasional spots of decay, all of the plywood was recently replaced. In this instance the plywood was first pressure-treated with creosote. Raw water rain distribution and secondary distribution troughs were all of plywood construction in addition to a high volume of plywood separators used in the system. Plywood is ¾-inch thickness bolted to lumber framing to form the various troughs and flumes required.

The new installation is expected to serve at least twice as long and perhaps substantially longer than that, providing a considerable saving in cost.

Periscope Packaging

Plywood often gets the call for "special" assignments.

A case in point is the U. S. Navy's ticklish problem of shipping periscopes. Recently it was solved by a Washington, D. C., engineering firm that designed a 43-foot fir plywood box which is 29 per cent lighter and more than 60 per cent more rigid than the old type lumber box.

The new container was designed and built by the Timber Engineering Company of Washington, D. C., under specifications set forth by the Navy Bureau of Ships. The sides, top and bottom are of 1¾" fir plywood with regular 4 x 8-foot panels scarfed to the required 43-foot lengths. Ends, cleats and diagonal bracing were made of fir plywood also.

Design work was carried out in accordance with recommendations set forth in "Technical Data on Plywood" which is published by the Douglas Fir Plywood Association. Boat hull plywood was used and while the initial design called for ⅜" fir plywood, the designers decided upon ¾" webs as more satisfactory in providing greater strength. The sides, ends, bottom and top were built as individual units, then bolted together to form a single box-beam type unit. The design lends itself to production line procedure although the first test box was made a piece at a time.

Plywood Gates

Bird & Son of East Walpole, Mass., has virtually eliminated costly in-transit damage to the heavy rolls of rugs and floor coverings it manufactures by using an economical plywood gate secured with metal strapping. Although more study is under way, it has worked with complete success in more than 100 carload shipments.

The company had previously been using 2 x 6-inch spruce which frequently split under heavy pressure, allowing loads to shift causing expensive damage to the shipments.

As the result of a suggestion box system, the company tried using ⅝" Plyscord—a low cost structural grade of fir plywood.

The 9-foot gates of plywood are reinforced by three vertical 2x6's located at each end and in the center. Gates are held in position by 1¼-inch steel straps, one strap for each 3000 pounds to be held secure by the gate. The straps are nailed to the anchor plates of the cars and are brought around and fastened in front of the plywood.

The pressure on the ends nearest the car walls causes the plywood to bow slightly thus anchoring the shipment firmly so it cannot shift back and forth.

Plywood Ice Boxes

Fir plywood ice boxes costing only $175 each are currently doing a better job than comparable steel boxes that cost $350 each at Union Ice Company, Los Angeles.

The boxes are used to keep dry ice from vaporizing in storage and en route to the company's customers. They are made with two sets of dimensions—45½" x 56" x 56" and 44" x 64" x 45".

Each box's side and bottom panels respectively comprise two layers of ½-inch-thick plywood separated by a 3-inch-thick layer of cork or Fiberglas insulating material. These panel components are nail and bolt assembled with plywood edge bands and standard metal fittings.

Because a removable canvas bag with a Fiberglas liner is used to insulate the upper surface of each load of dry ice, lids or top panels for the boxes are single layers of ½-inch-thick plywood.

According to C. F. Scott, Union Ice Company's chief engineer, the new plywood boxes are not only as durable as steel boxes; they have the advantage of being impervious to corrosion and resistant to impacts of the type that produce dents in sheet metals.

Plywood "Unit Load" Car

A new design in freight car construction involving 2,480 square feet of fir plywood per unit was unveiled in Chicago this fall when International Steel Company of Evansville, Ind., took the wraps off the first "Unit Load" box car.

Not only new in basic design, the car also uiltized combinations of materials which have seldom or never been used in railroad car manufacture. At the same time it is a design which could be adapted to handling plywood and lumber. With conventional cargoes, the car is designed now so that two men can unload a palletized packing system in a phenomenally short 10 minutes. Normal time is 10 to 16 man-hours.

Key to the new design is construction allowing for five separate compartments divided by four structural partitions. Each compartment is accessible from either side of the car by panelized overhead doors which roll up and out of sight in seconds. The compartments permit for the first

(Continued on page 102)

Plywood Panels from Douglas Fir

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At right is a WILLIAMS-WHITE cold press of 575 tons capacity, with plate size 106" x 54" and adjustable daylight opening, 80 to 123 inches.

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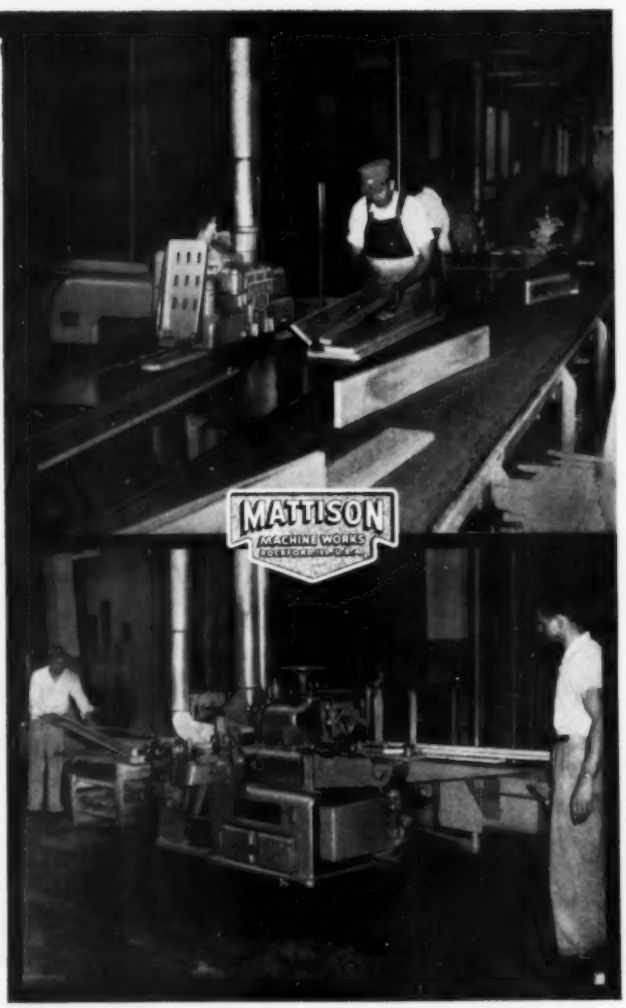

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Plywood Traffic Signs Can Take Punishment

HIGHWAY SIGNS MADE OUT of fir plywood can really "take it."

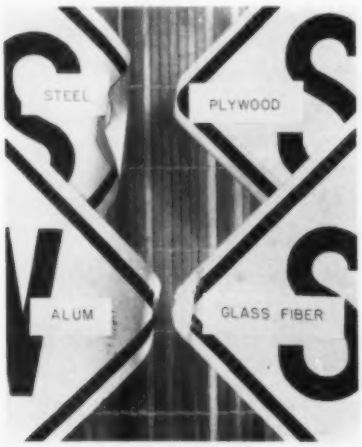
Under the supervision of DFPA engineer Thomas Moran, research tests were conducted on plywood, aluminum, steel and glass fiber.

These tests simulated flying missiles, knockdown, gunfire, bending, racking and were carried out under laboratory controlled conditions on each of the base materials. Results were judged on the basis of careful measurement of physical damage that would cut the ultimate life of the signs, and also on the basis of impaired visibility that would create dangerous traffic situations demanding immediate sign replacement.

Comparative results indicate that the fir plywood signs are generally more resistant to damage than those made of metal and fiber.

In the flying missile tests, objects of uniform shape and weight were hurled against the various signs from a mechanical catapult with identical force and at the same angle of impact. On the **plywood signs,** the Scotchlite reflective sheeting was damaged only at ruptures at actual point of contact. Generally, the Scotchlite reflective sheeting was not damaged sufficiently to affect seriously the reflective properties.

On the **aluminum signs,** rupture was greater, even to the back side of the signs. The Scotchlite was removed wherever the missiles contacted the surface, impairing the signs' reflective properties in that area. On **steel signs,** the missiles created more extensive damage than on the aluminum, with bigger depressions at points of contact and complete removal of Scotchlite. Bonderized coating, used on the steel to prevent rust, was also broken, exposing bare metal.



RESISTANCE TO KNOCK-down damage on signs: Plywood sign has ½" corner bruised, compared with steel, damaged 8" from corner.

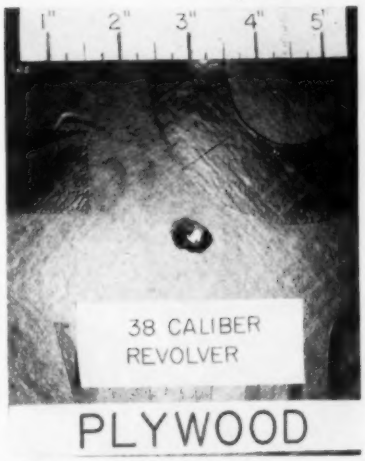
On the **glassfiber signs,** in which reflective material was incorporated in the surface of the material, the primary damage was flaking of this surface material itself. Ruptures through to the back of the signs were observed, along with complete penetration in several instances.

In the knockdown tests, uniformity of conditions was established by a 16-lb. pendulum released from the same height to knock down the signs, causing them to strike one corner against the floor at the same angle with equal force. The **plywood signs** were damaged only ½-inch from the corner of the sign. The **aluminum** was bent back to a 90° angle about 5 inches from the corner and received a warp across the entire sign. **Steel signs** were severely bent back at a 90° angle for about 8 inches from the corner. The **glass fiber signs** were completely shattered at the point of impact with the floor, and about 5 square inches at the corner became a soft mat of fiber.

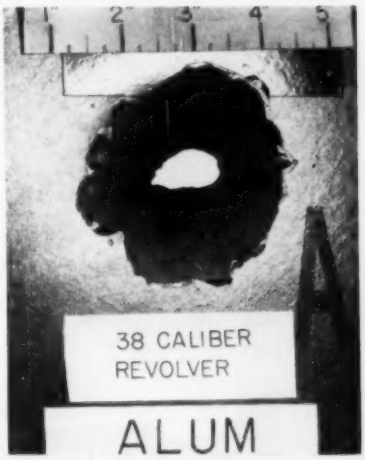
In the gunfire tests, .22 cal. and .300 Savage rifles, and a .38 Special cal. revolver were fired at the signs, from 70 feet at the same angle. On the **plywood signs,** bullet holes were sharply defined with very little shattering around edges, for example a ⅜-inch hole and ½-inch shatter area, with a .38 cal. bullet. The Scotchlite was removed only in the immediate area where the bullet entered the sign.

On the **aluminum signs,** the bullets created shock areas which caused the Scotchlite to fall away, leaving bare metal. Result was a ⅜-inch hole, 1-inch bare metal, and 1½-inch shock area, with the .38 cal. bullet. On the **steel signs,** the .38 cal. bullet did not penetrate, but it made a dent 1-inch in diameter, ⅜-inch deep, exposed 2¼ inches of bare metal and left a shock area of 2½ inches. On the **glass fiber signs,** the bullet left jagged holes, but limited to the area of immediate penetration with a ½-inch hole and a 1/16-inch shock area with the .38 cal. bullet.

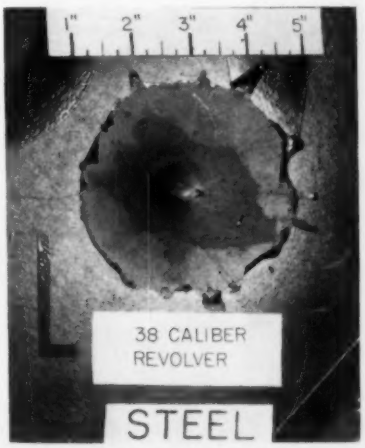
In the bending and racking tests, the signs were solidly anchored to a 4x4-inch post for attack by hand, and were also tested in an Olsen compression testing machine to determine effects under controlled pressures. **Plywood signs** sustained least damage, either in bending of the sign itself or in tendency to remove from the post. The **aluminum sign** bent more readily than plywood, but could not be loosened, due to its flexibility. The **steel sign** was easily bent to 90° and retained the bend, as it was wrapped around the post. The **glass fiber sign** bent readily, and the combination of bending and racking pulled the lag screw heads and washers through the material.



CLOSEUP SHOWS RESULTS of gunfire tests (.30 Special cal. bullets) on three base materials used in highway signs. Damage to plywood was restricted to bullet impact area.



DAMAGE TO HIGHWAY sign construction materials showed that aluminum has extended shock area. Plywood proved most resistant.

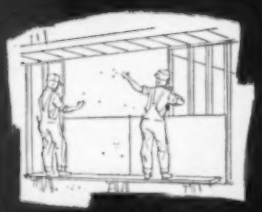


EXTENDED SHOCK AREA of the 38 caliber revolver bullet in the steel material used to make highway signs. Tests rated plywood high.

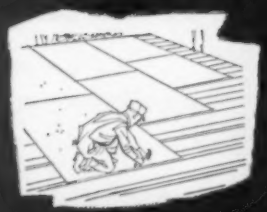
Demand this trademark!

GENUINE
DOUGLAS FIR PLYWOOD
PLYSCORD®
INTERIOR TYPE GRADE C-D
SHEATHING

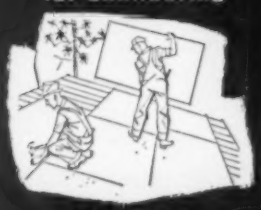
DFPA® TESTED QUALITY



PLYSCORD® for wall sheathing



PLYSCORD® for subflooring



PLYSCORD® for roof decking

Here's why! **PlyScord is Plywood Sheathing Quality-Tested* for**

1. Correct veneer grades—inside and out
2. Strength, rigidity and stiffness
3. Dependable glue-line performance

The true quality of plywood sheathing isn't always visible. What's *inside*—glue quality . . . inner-ply quality—is all-important.

*PLYSCORD® is quality-tested under established industry procedures, according to published Commercial Standards.

Insist on DFPA-PLYSCORD® when you buy, specify, or use plywood sheathing.

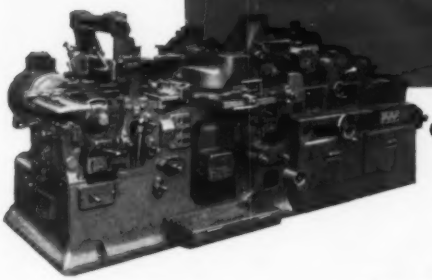
Douglas Fir Plywood Association (DFPA) Tacoma, Wash.—a non-profit industry organization devoted to product research, promotion and quality maintenance.

YA®

First with the *Finest*

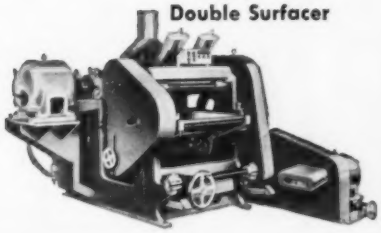
in woodworking machinery

Established 1883

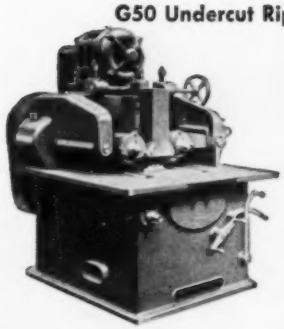


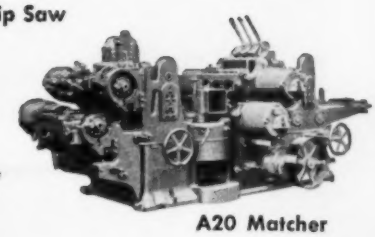
C99 Electric Moulder

No. 177 Double Surfacer



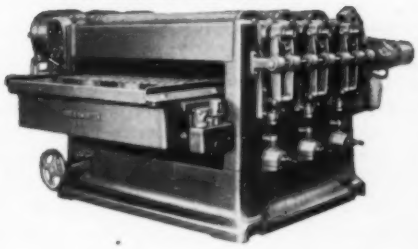
G50 Undercut Rip Saw



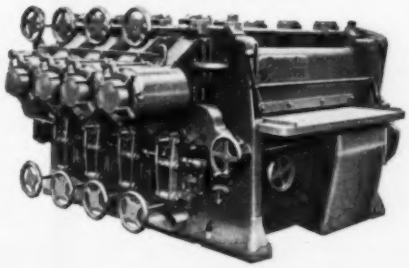


A20 Matcher

S333 Endless-Bed Sander



S800 Roll-Feed Sander



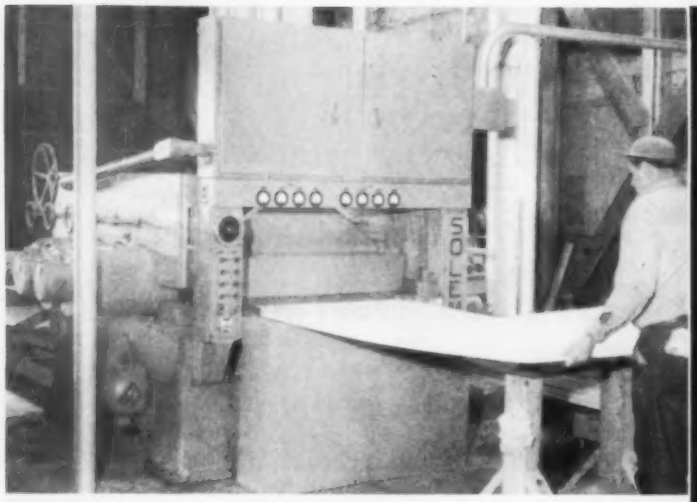
V54 Band Resaw

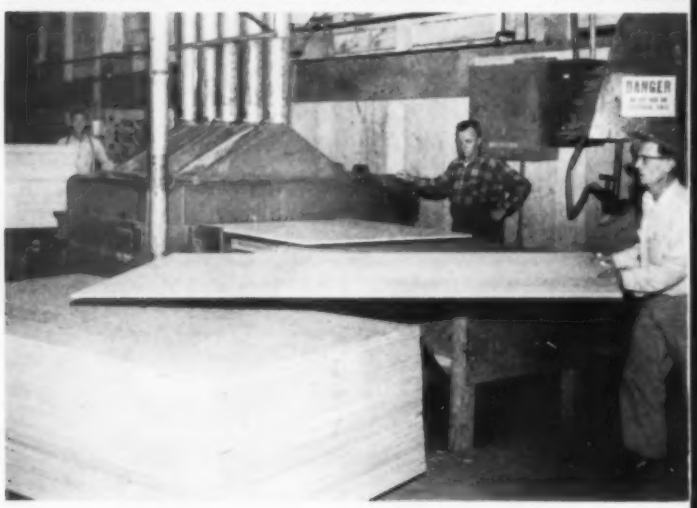
Yates-American

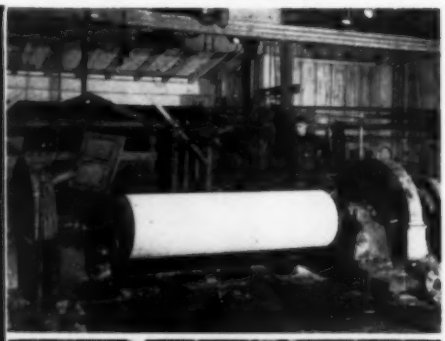
BELOIT, WISCONSIN

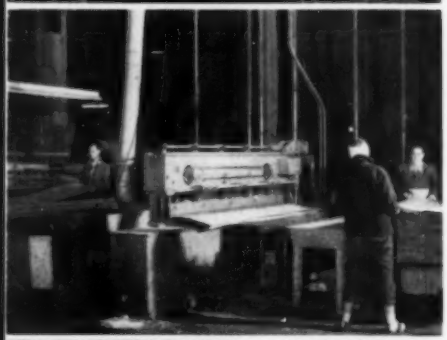
Branch Offices: CHICAGO, ILL • HIGH POINT, N. C. • MEMPHIS, TENN. • PORTLAND, ORE.

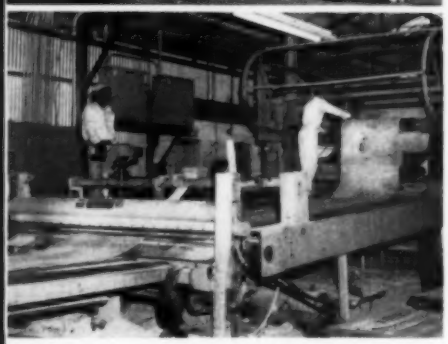
Drum Sanders Supreme...by Solem
Veneer Machinery by Merritt-Solem











ABOVE:

Highly-favored Solem double-deck eight-drum sander is here seen operating in a large fir plywood plant in Oregon. If your operation is one where ultra-high sanding production on Douglas fir or other softwoods is the dominant factor, this is the unit you need. You get safe operation, high production, and a fine sanded finish. Each drum motor is push-button controlled. Ammeters show the sanding load on each drum.

BELOW:

Highly-competent endless-bed four-drum Solem sander is here seen operating in the progressive plant of Western Plywood Company, Ltd., Vancouver, British Columbia. These machines are much used in sanding hardwood plywood with relatively thin faces; they do such work admirably and economically, without cutting through face veneer.

TOP:

Merritt-Solem rotary lathes are available in a full line, and are highly favored everywhere. Real cost reducers! This unit is in operation at Sooke Lake Lumber Company, Ltd., Victoria, British Columbia.

CENTER:

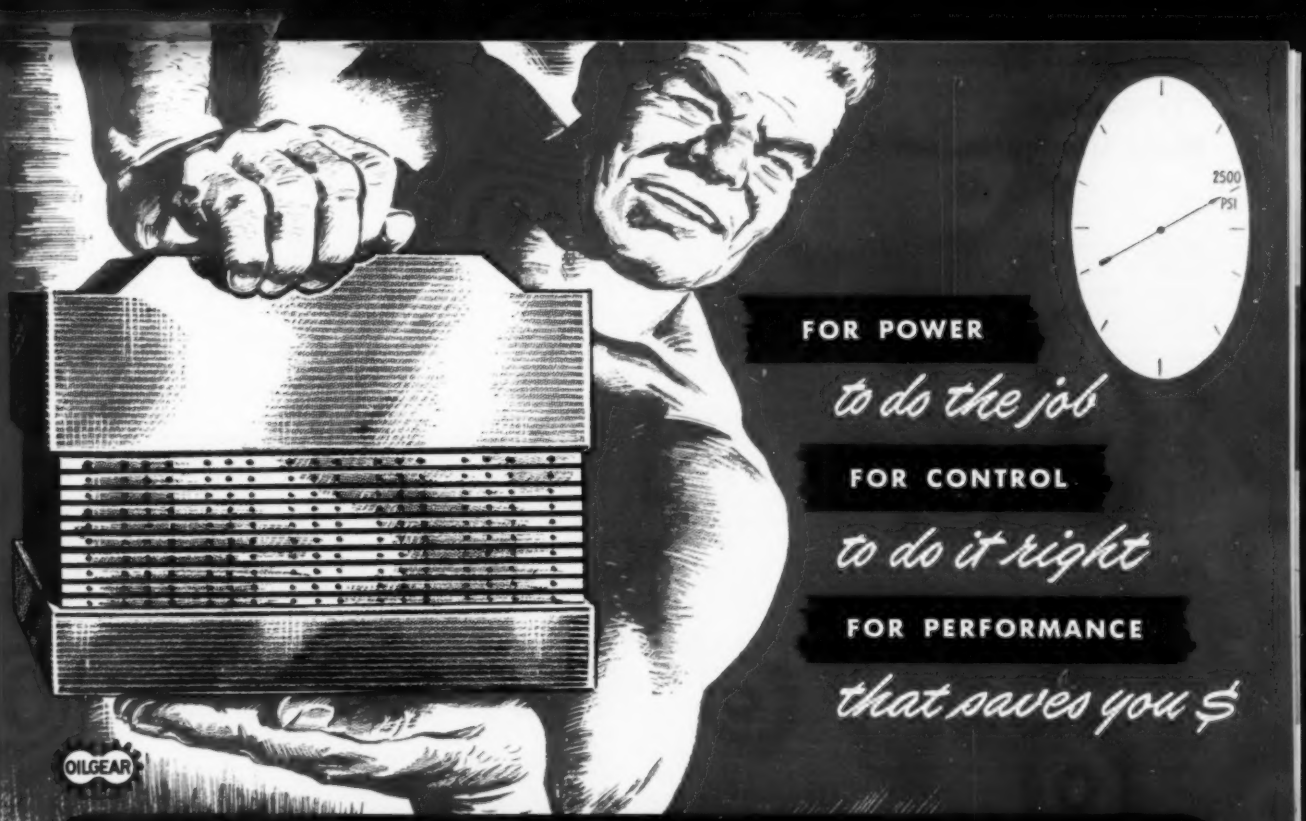
Merritt-Solem traveling head veneer jointer is a natural teammate for the Merritt-Solem rotary lathe. The machine shown here is providing quality-jointed veneers in ample supply for a cross-feed type veneer splicer, at Sooke Lake Lumber Company.

BELOW:

Merritt-Solem clippers are used under all types of working conditions, provided with auxiliaries to suit. The one seen to the left in this illustration is operating in conjunction with a Merritt-Solem reeling and unreeling system.

Write for Information Now!

SOLEM MACHINE COMPANY ROCKFORD ILLINOIS



Oilgear Fluid Power Systems
FOR HOT PLATE PRESSES

Many outstanding manufacturers of hot plate presses for the woodworking field, as well as makers of heavy duty presses in other fields, have standardized on Oilgear tried and proven "Fluid Power" pumps, cylinders and valves.

Oilgear systems on Veneer and Plywood Presses provide an adjustable working pressure to suit the work performed—a variable ram speed—automatic reduction of pump stroke and power input when pre-set pressure is reached—maximum pressure indefinitely without excessive heating or power loss. Low maintenance cost and high efficiency coupled with use of power only in proportion to the resistance of the work make their operation very economical. Simple, semi-automatic or full automatic controls are easily applied.

You get controlled, variable high speed for closing and opening press. You can vary the force to suit the material processed. You save a high percentage of power and reduce heat and wear during the curing time. Your Oilgear system will be simple, easy to install, and trouble-free. Investigate these and other operating values inherent in Oilgear pumps, cylinders, and valves. They have proven successful for over a quarter century on other tough applications.

Talk to mill men who have installed Oilgear and you will hear why they are enthusiastic about its ability to save time, money and work. Then write to our district or home office about Oilgear for

- Carriage Drives
- Gang Saw Feed Rolls
- Set Works and Holding Dogs
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- Edgers
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- Conveyors
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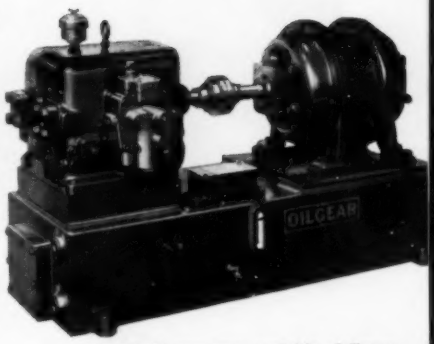
- Hot Plate Presses
- Baling Presses
- Paper Machine Drives
- Calender Drives
- Winder Drives
- Unwinder Drives
- Hold-down Systems



Standard one-way variable delivery pump, type D.P. Automatic pressure unloading control, direct-connected electric motor, mounted on reservoir base.

THE OILGEAR COMPANY

Contact our West Coast Field Engineering and Service Representatives

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551 Roosevelt Bldg., 727 West 7th Street
Los Angeles 17, Calif., Phone: Vandike 8544

OR WRITE MAIN OFFICE
1562 W. Pierce Street · Milwaukee 4, Wisconsin

Plywood

Moké Illustrates New Concept In Styling

MOKÉ, A NEW DESIGN CONCEPT for fir plywood that has already captured the fancy of the display and design world, has opened the door to new plywood markets with its limitless applications and effects. The name Moké, based on a seldom-used English word "mok", means to weave and literally describes some of the effects created when fir plywood is cut into patterns in such a ways that dowels or other inserts form an attractive third dimensional relief effect.

One of the earliest exponents of the new art was William Palmer, display director at Meier & Frank Co., Portland, Ore., who adapted Moké to the window backgrounds.

But Mokés scope has been found to extend far beyond the department store display window. It can be used as a windscreen in the back yard, a ceiling for a business office, a room divider in a home, or the soffit over a fireplace. Such new uses as these and many more are being discovered every day for Moké.

The original concept of Moké was developed for Douglas Fir Plywood Association by the architectural firm of Smith and Williams in Pasadena, California. It was one of fifty new ideas for fir plywood developed by five architectural firms commissioned by the association for this purpose. Upwards of forty variations on the Moké idea were worked out by Earl Pennington of Palo Alto, Cal., field promotion representative for DFPA.

The idea is primarily adaptable to quarter-inch fir plywood and would probably lend itself best to background panels and display work and to interior decorative treatments. Composition panels are apt to crack or break and are not suitable for use in this kind of work.

WOVEN EFFECTS ARE CREATED with spreaders or spacers. The plywood is cut as desired, then sprung away from the plane of the panel surface. Colored fabric or fiber glass placed between the openings in the panel and a light source produces a potentially wide range of dramatic color effects.

Virtually any design can be executed with ordinary tools. A portable saber saw is the most versatile. Scroll or table saws with saber attachments are also suitable.

In general, a suggested design is laid out with ruler and compass on paper and then transferred to the surface of the plywood. All cuts which require springing of the panel surface should probably be at least 10" long. Shorter cuts are apt to cause distortion in the panel and require framing for the edges.

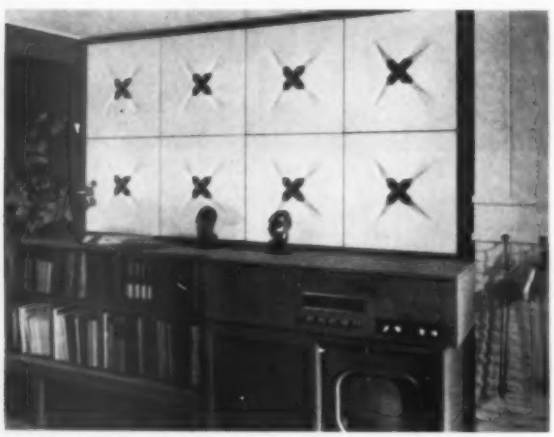
Cuts are usually started by drilling holes to provide a starting point for the saw cut. Holes can be made ¼" to ⅜" or larger depending upon the design effect which is required.

After the cuts have been made, the pie shapes, squares or peninsula forms are sprung away from the panel face and held in place with dowels, pegs, battens, or squares in any kind of material such as wood or plastic.

The treatment lends itself to all kinds of pattern effects.

Specialty designs carrying out various motifs suitable for shops or departments in such fields as music, sporting goods, appliances, optical and photo supplies are easy.

The Douglas Fir Plywood Association has produced a free ten-page brochure which covers a number of Moké patterns and a wide variety of design possibilities.



A COMPLETELY new concept in design—Moké, here illustrated as wall treatment. Moké increases plywood's strength, as well thru flexing or stressing it into compound or simple curves. Surface textures and patterns are achieved by cutting slits of various kinds in a thin panel face in such a way that parts, strips, bands, pie shapes may be bent in or out with dowels, stringers, pegs or discs.

On the Plywood Front . .

• A look at the leader shows what's happening in the plywood industry: U. S. Plywood Corp.'s sales and earnings for the first nine months of its current fiscal year are the highest for a comparable period in the company's history.

Sales (9-mo. period ending 1-31-56)	$149,311,000
Sales (9-mo. period ending 1-31-55)	106,844,000
Net profits (same period, ending 1-31-56)	$ 8,615,900
Net profits (same period, ending 1-31-55)	5,097,100

Manufacturers of

Elma Plywood Corporation

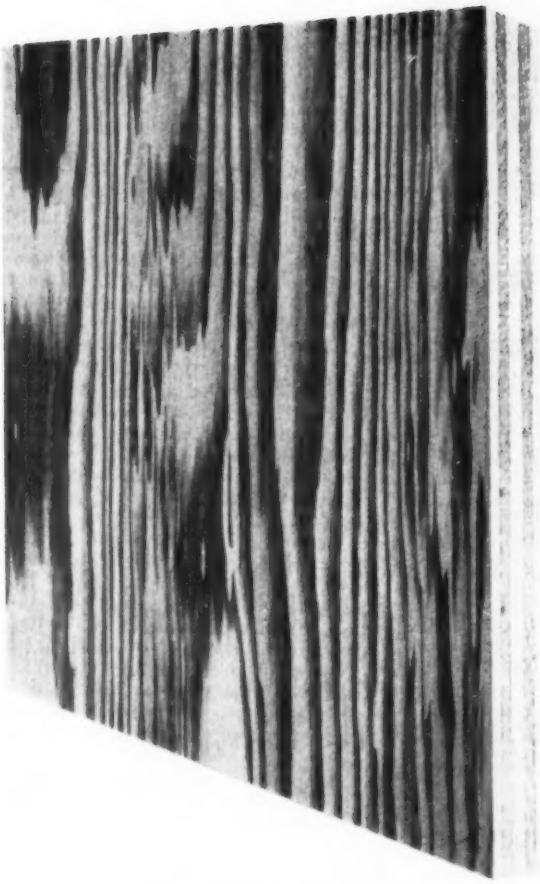
4'x4' PLYWOOD SHEATHING

Telephone Elma 2521
ELMA, WASHINGTON

4' x 4' Plywood Sheathing for Economy in Price and Ease in Handling

QO FURAN CHEMICALS®

why FURAFIL® 100-S is popular



Furafil 100-S is a dependable extender for phenolic resins; it is now used in over half the U. S. mills producing exterior fir plywood.

HERE'S WHY

1 *Furafil 100-S extended glues are simple and quick to mix, require no external heat during mixing.*

2 *With a low mixed glue cost, users can afford adequate glue spreads to add that extra margin of safety needed when rough stock is encountered.*

3 *Furafil 100-S extended resin glues are particularly effective in gluing the variable hard and soft grain veneers sometimes encountered.*

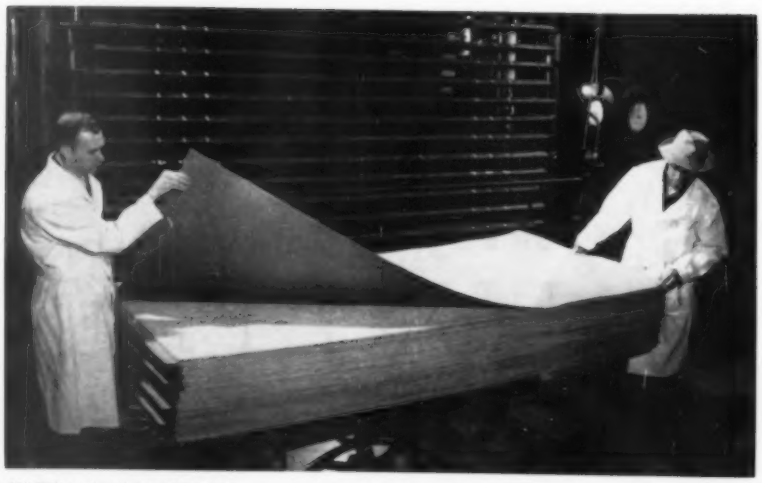
4 *The glue line shows up well on the core permitting ready inspection of the glue spread.*

5 *Furafil 100-S extended glues have a short press time assuring maximum throughput.*

These are some of the reasons why Furafil 100-S has gained wide usage. We invite your inquiries.

The Quaker Oats Company
QO CHEMICALS DEPT.

344G The Merchandise Mart, Chicago 54, Illinois
Room 544G, 120 Wall St., New York 5, N. Y.
Room 444G, 3000 N. Going St., Portland 11, Oregon



CREZON PLASTIC SURFACE, a resin impregnated cellulose fiber sheet, is applied to plywood panel and permanently fused in hot press. Panel is then weather and waterproof. This process is a development of the United States Plywood Corp. and Crown Zellerbach Corporation.

Industry Offers Specialties

New faces and finishes on plywood enhance its beauty and utility

THE VERSATILE PLYWOOD INDUSTRY has come up with some new ideas in finishing plywood faces to attract more consumer interest and broaden its markets.

THE LUMBERMAN presents here descriptions of some "new looks" in plywood.

Tree Life Specialties

Both industry-wide and individual company specialties are being turned out by the St. Paul & Tacoma Lumber Co.'s plywood division at Olympia, Wash.

These "Tree Life" specialties are described as follows:

PLYGLAZE
High-Density Overlaid Exterior Plywood
Ideal for concrete forms, signs and other industrial uses. Hard, non-absorbent fused resin-fiber surface gives maximum wear resistance. Standard plywood sizes.

KNOTTY PINE
Exterior Plywood Paneling
Handsome, masculine knotty pine in practical panels. Beautiful Idaho white pine with fir plywood core. Comes in 4'x8' panels, ¼" and ¾" thick. Factory packaged.

KNOTTY CEDAR
Exterior-Type Plywood Paneling
Combines rich good looks of cedar with plywood's size and strength. For paneling, cabinets, exterior accents. Comes in 4'x8' panels, ¼" and ¾" thick.

MOIRE
"Brushed Grain" Exterior Fir Plywood
Distinctive, accented grain adds depth, dimension, interest. Ideal for paneling, displays, exterior accents. Comes in 4'x8' panels 5/16" thick. Factory packaged.

TEXTURE ONE-ELEVEN
"Grooved" Exterior Fir Plywood
Deep parallel grooves plus rough surface enhance natural wood beauty. For siding, paneling. Comes in 8' and 10' lengths; grooves 2" or 4" o.c. Factory packaged.

PLYALOY
Paint-Grade Resin-Fiber Overlaid Plywood
Plyaloy is medium-density phenolic-resin-overlaid Exterior fir plywood (EXT-DFPA). The overlay surface is smooth, tough, and grainless—permanently fused to the panel. Provides a superior paint surface; gives maximum protection against grain-raise and checking. PLYALOY is available in standard fir plywood sizes and thicknesses—overlaid one or both sides—and in special pre-cut siding widths. It is an extra-durable panel material for hundreds of building and industrial uses.

SELECT CABINET STOCK
Premium-Grade Panels for Fine Natural Finishes TREE LIFE Select Cabinet Stock is premium-quality fir plywood, manufacturered expressly for fine cabinet work. Face veneers are carefully selected for beauty and uniformity of grain pattern, with no machine-made plugs or patches. Inner plys are solid, expertly patched to eliminate core gaps at the edge of the panel. Select Cabinet Stock is the ideal specfication for cabinet work of any kind that is to have a natural finish.

Duraply Extends Utilization

The Douglas fir plywood industry's newest specialty, which may eventually be as common as some of the regular graded panels, was introduced the first of this year at United States Plywood Corp.'s plant in Seattle. It is "Duraply."

As far as properties and uses go, Duraply is similar to the plastic-surfaced plywood now pressed by many different fir plywood mills. However, this high-grade product is achieved with a unique new process that utilizes low-grade sheathing type plywood.

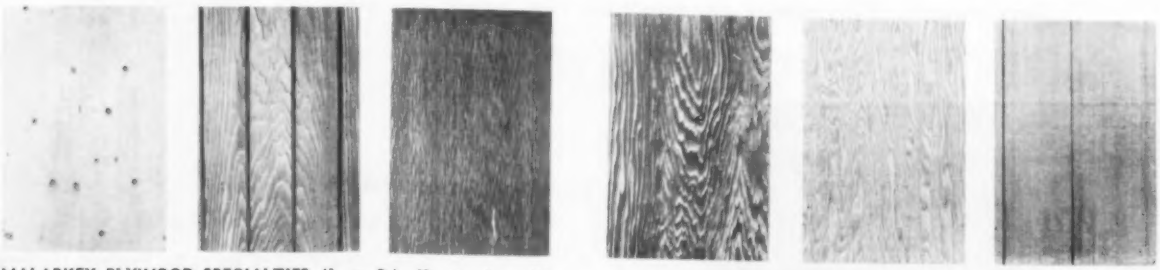
Knots and other defects are routed out and these depressions filled with a phenolic resin compound. The surface is then pressed, baked and sanded. Next step is to apply a resin-impregnated cellulose fibre sheet (Crezon, a product of Crown Zellerbach Corp.). This sheet is hot pressed and permanently bonded onto the plastic-filled panel.

Thus a wide horizon of premium uses for wood material otherwise destined for lower-priced construction uses is opened. Duraply sells for somewhat less than regular plastic-surfaced plywood made from panels with just the highest grade veneer faces.

A complete description of Duraply and its manufacture is found in THE LUMBERMAN, Feb., '55, p. 79.

Jumbo Marked Panels

One of the most timely plywood specialties for the American building boom is that being supplied by Mena-



MALARKEY PLYWOOD SPECIALTIES (L. to R.): Knotty pine with toasted V-grooves; Rusticwood, redwood canneled on four-inch centers; Plyweave, available in fir or redwood; Rift Grain Redwood with toasted V-grooving to resemble random planking; Fir Shadowood, brushed texture panels available in plain or planked; Redwood Shadowood plywood has high sheen and hard surface, many uses.

Specify

*SILVACON

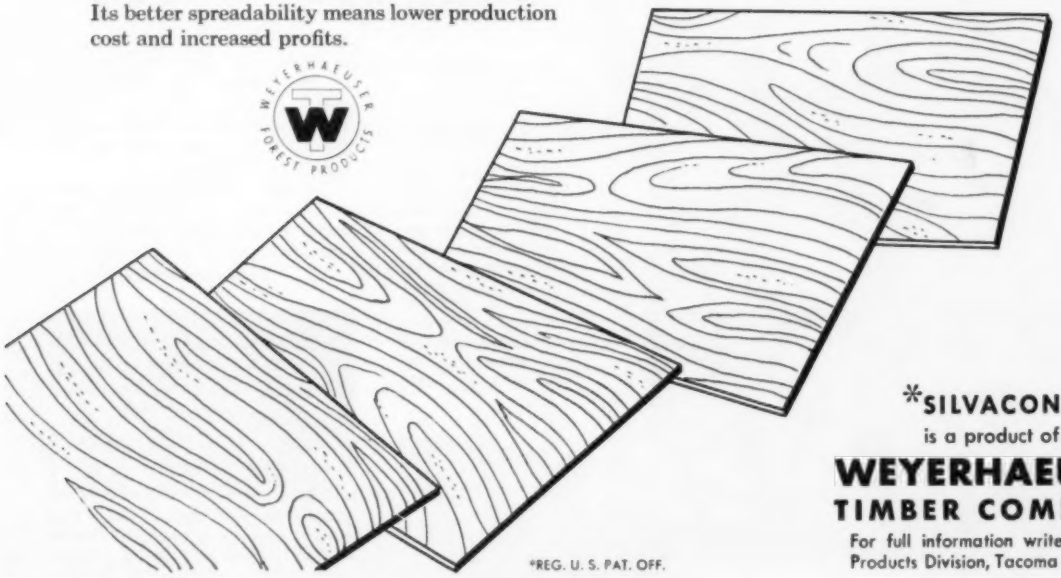
PHENOLIC GLUE EXTENDER

AN ACTIVE INGREDIENT IN THE GLUE LINE

Glues containing Silvacon offer these advantages:

- LONGER ASSEMBLY TIME
- GREATER TOLERANCE FOR HOT OR MOIST STOCK
- BETTER SPREADABILITY
- FEWER "BLOWS"
- HIGHER YEAR AROUND QUALITY
- LOWER GLUE LINE COST

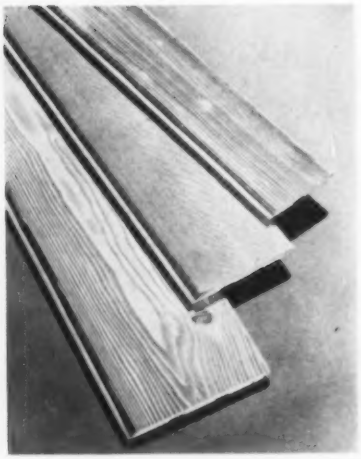
Silvacon's dependable and uniform quality is recognized throughout the plywood industry. Since it becomes an active ingredient in the glue line, it forms a bond of maximum strength. Its better spreadability means lower production cost and increased profits.



*REG. U. S. PAT. OFF.

*SILVACON
is a product of
WEYERHAEUSER TIMBER COMPANY
For full information write Special Products Division, Tacoma 1, Wash.

COMPLETE PROTECTION for their premium specialty products is part of the production picture at St. Paul & Tacoma. Sturdy paperboard containers hold up to 10 4x8′ panels.



A NEW LUMBER SPECIALTY is this product, called "Surfplank." It has a textured surface suitable for various interior applications. (Picture courtesy United States Plywood Corp.)

sha Plywood Corp., North Bend, Ore. It is mixed cars of sheathing and studs.

To Menasha's regular plywood manufacturing facilities has recently been added a new stud mill, claimed to be one of the most modern in the industry. Studs are packaged and steel strapped for quick and easy carloading and unloading by small fork lift trucks. The customer has his choice of straight cars or mixed cars of both studs and sheathing.

Menasha's sheathing is trademarked 4x8′ "Jumbo Marked Panels," which were first featured in THE LUMBERMAN's annual plywood review in the yearbook number of March 25, 1955. The panels are graded DFPA "Plyscord" and specially overprinted with parallel guide lines for nailing and erection. The lines are printed 16″ and 24″ o.c.

These marked panels save time in the actual building job. They are loaded in strapped units 4x4x8′.

Coos Bay Lumber Specialties

Plywood specialties of the Coos Bay Lumber Co., Coquille, Oregon, include two-side Coos Bay Hardboard overlay, one-side Coos Bay Hardboard underlayment, and Brushed Plywood.

The two-side overlay is for interior use only: cupboard door stock, sliding doors, plastic base for table tops, counter tops, display stands and die boards. It is three plies of wood veneer sandwiched between two plies of Coos Bay Hardboard. Thicknesses are ¼″, ⅝″ and ¾″ after sanding two sides. Sizes are 4′x6′, 4′x7′, 4′x8′ and 4′x10′.

One-side underlayment is for interior use only: base for linoleum, and rubber and asphalt tile in kitchens and bathrooms. It can be inverted so that the hardboard side shows through the beams in living room or joints in the basement as a finished ceiling. The plywood side can then be used as a base for hardwood floors. The product consists of four plies of wood veneer and one ply of Coos Bay Hardboard. Size is 4′x8′ and the thicknesses are ½″ and ⅜″. The product combines sub-flooring and underlayment in a single material which saves one operation in laying floors.

Brushed Plywood, made from Douglas fir with spring growth removed, may be patched or patch free with a limit of five patches. Used for interior decorative purposes, it can be stained, painted, and rubbed or finished natural. Square-edged, it is 4′x8′, ¼″ thickness.

Veneers Used on Doors

Buffelen Woodworking Co., which now operates as a coop the former Buffelen Mfg. Co. plant at Tacoma, is one of the more highly integrated plants in the industry. The company produces a wide range of specialties as well as regular DFPA graded panels.

A major adjunct to the plywood plant is a door manufacturing factory, turning out hollow core, solid flush and panel doors. A large volume of plywood of both domestic and Philippine woods is used in the hollow core and solid doors. Vertical grain Douglas fir plywood outer skins pressed onto scientifically designed hollow cores provides a strong and light door. These doors are marketed under the Buffelen trade name of Buffco "Litewate" doors.

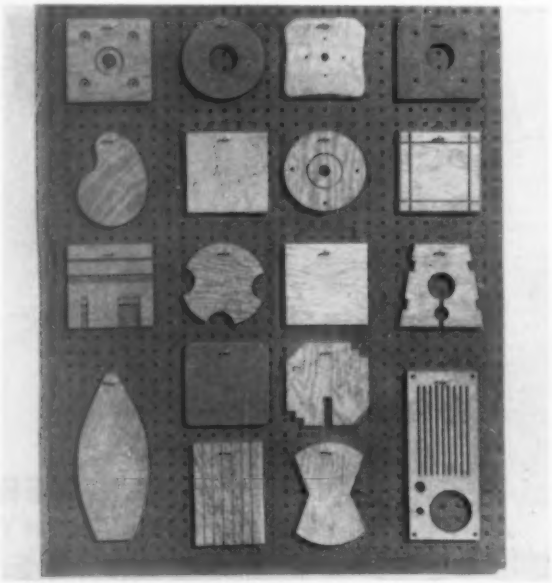
On occasion, the company has produced on order such specialties as vertical grain hemlock plywood panelling, a light-colored beautiful interior finish material.

Cascades Makes Specialties

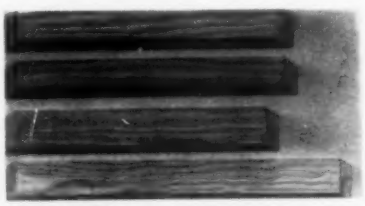
One of the largest-scale plywood specialty operations is that inaugurated by Cascades Plywood Corp. known as its "Custom Manufacturing Division." This operation is housed in a separate large building adjacent to the main plywood plant at Lebanon, Ore.

Custom Mfg. Div. was established as a service to industrial plywood users who require specially cut or machined pieces of plywood for mak-

(Continued on page 122)



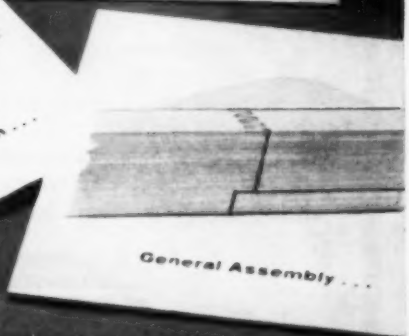
CASCADES PLYWOOD's Custom Mfg. Div. cuts these many shapes of plywood items as a part of regular production in new plant at Lebanon, Oregon. Hardboard and hardboard-faced plywood are also shaped, cut, etc., according to order.



FOUR SEPARATE CLEATS which have been sawed to length, ends beveled at Cascades Plywood Co. Custom Mfg. Div. at Lebanon, Ore.

For better bonds . . . for finer service . . .

call MONSANTO



Monsanto serves industry with the world's most complete line of adhesives. An extended research program is constantly pioneering new adhesives and new application techniques. Monsanto technical experts in the field are always ready to advise and assist you on any production problem. For better bonds . . . for better service . . . call Monsanto.

Check List of Monsanto Adhesives

Casein . . . supplied as dry powders for assembly gluing, laminating, prefabricated housing operations, etc.

Melamine . . . comparable to the phenolics and resorcinols in durability. Used in wood gluing applications where a colorless glue line is essential.

Phenolic . . . in liquid and powder form for exterior plywood or other wood assemblies which are subject to extreme exposure conditions.

Resorcinol . . . the only completely durable adhesives which will cure at room temperature. Used in ship's keels, laminated rafters, prefabricated housing, etc.

Soybean and Soybean Blend . . . unexcelled for production of interior grade water-resistant plywood by cold and hot press and No-Clamp methods.

Urea . . . a comprehensive line of powder and liquid resins for plywood manufacture. Also for edge gluing of lumber in clamps or by high frequency, and for tapeless splicing of veneers.

For full information on Monsanto's complete line of adhesives, write to Monsanto Chemical Company, 911 Western Avenue, Seattle, Wash.

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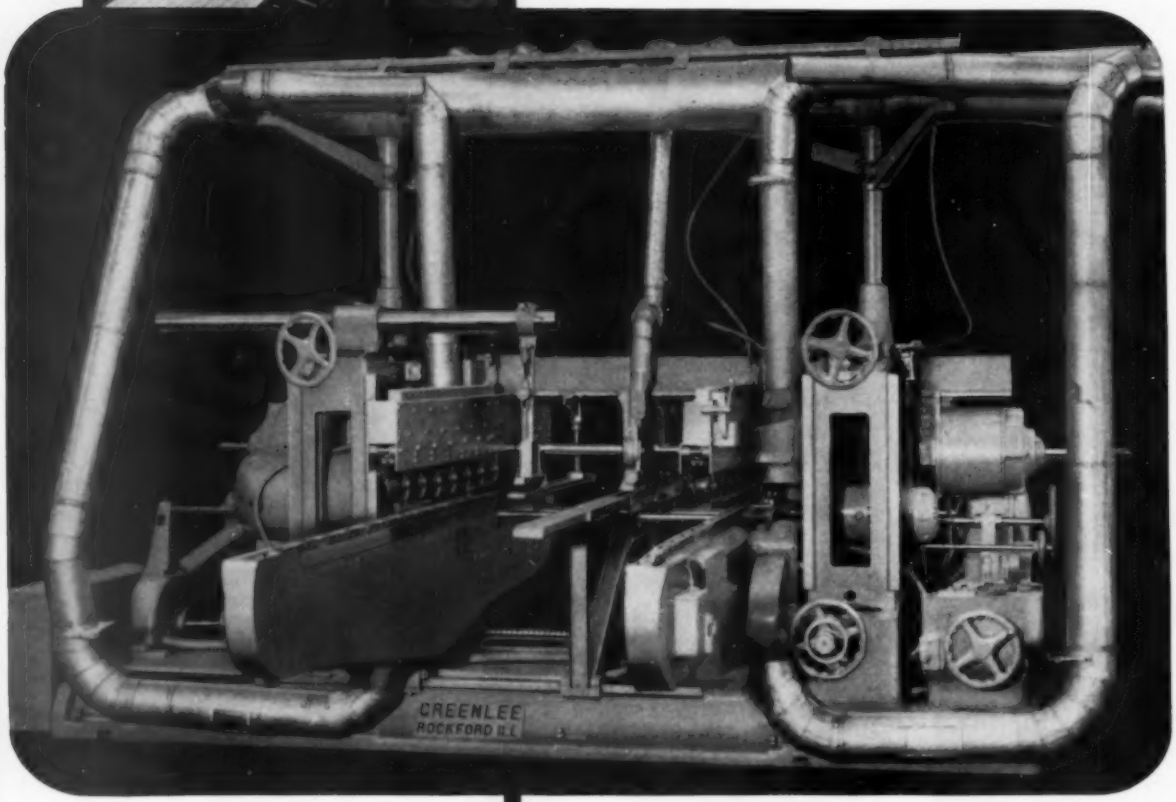
PLYWOOD SIZING AND SPLITTING



GREENLEE NO. 545 SKINNER SAW

Rubber roller hold-downs, with individual air cylinders for wheels, automatically compensate for varying panel thicknesses. You feed different thicknesses, or a number of panels, at will.

Stationary dado with overhead support handles splitting and special grooving work. V-Chains and tracks, pioneered by Greenlee, give greater cutting accuracy. Tracks machined of laminated material eliminate lubrication and wear problems. Inserted-tooth drive sprockets heat-treated for long life.

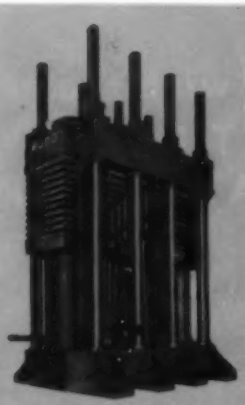
Offal reduced to shavings by machine illustrated through the use of hogging heads and removed by an engineered exhaust system.

Machine readily adaptable to automatic transfer units for moving work from skinner saw to a cutoff saw or other production units.

Here are the kind of production efficiencies many plywood producers are enjoying today with a GREENLEE No. 545 Skinner Saw on the job: *Greater production* . . . up to 110 feet per minute, running either single panels or several at the same time. *Unusual cutting accuracy* . . . square, true edges that never vary. *Fast setup time* . . . provides efficient, economical use of the machine on either short or long runs. Other advantages include minimum down time, minimum maintenance, to help you streamline and perfect the quality of your production—whether you make plywood, hardboard or chipboard. Write today for complete data.

MACHINERY & TOOLS
GREENLEE

GREENLEE BROS. & CO., 1803 TWENTIETH AVE., ROCKFORD, ILL.



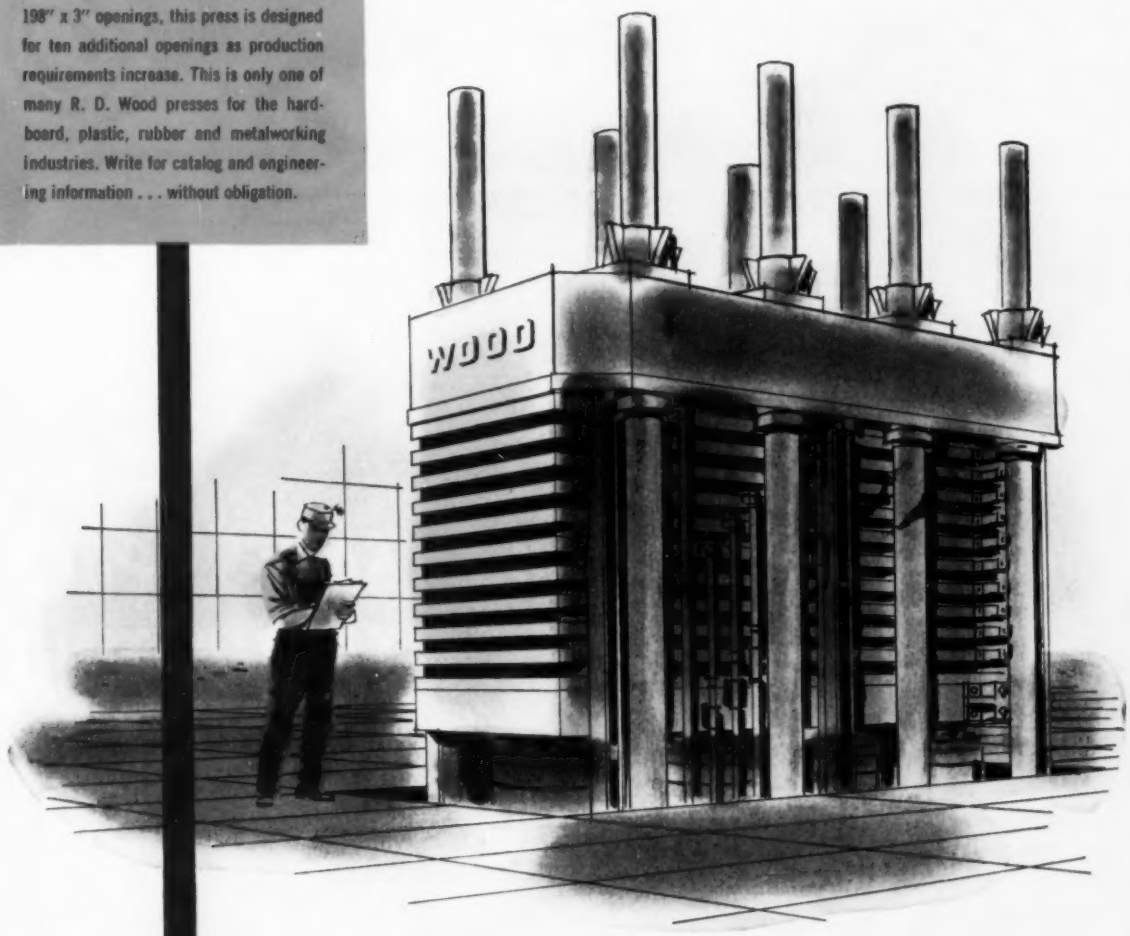
3,675-ton Self-contained Multiple Opening Platen Press for the manufacture of wet process hardboard. Built with ten 54" x 198" x 3" openings, this press is designed for ten additional openings as production requirements increase. This is only one of many R. D. Wood presses for the hardboard, plastic, rubber and metalworking industries. Write for catalog and engineering information . . . without obligation.

Twice the price won't buy a finer press

Watch an R. D. Wood press at work and you'll see why.

Here is *dependable performance*—smooth, precise operation; high production; minimum downtime for maintenance.

And here, too, is long, trouble-free service. Reason: every R. D. Wood press is the product of meticulous design, excellent materials, superior craftsmanship. We build our presses *to be best*—and nothing less. You can't buy a finer press—even at twice the price!



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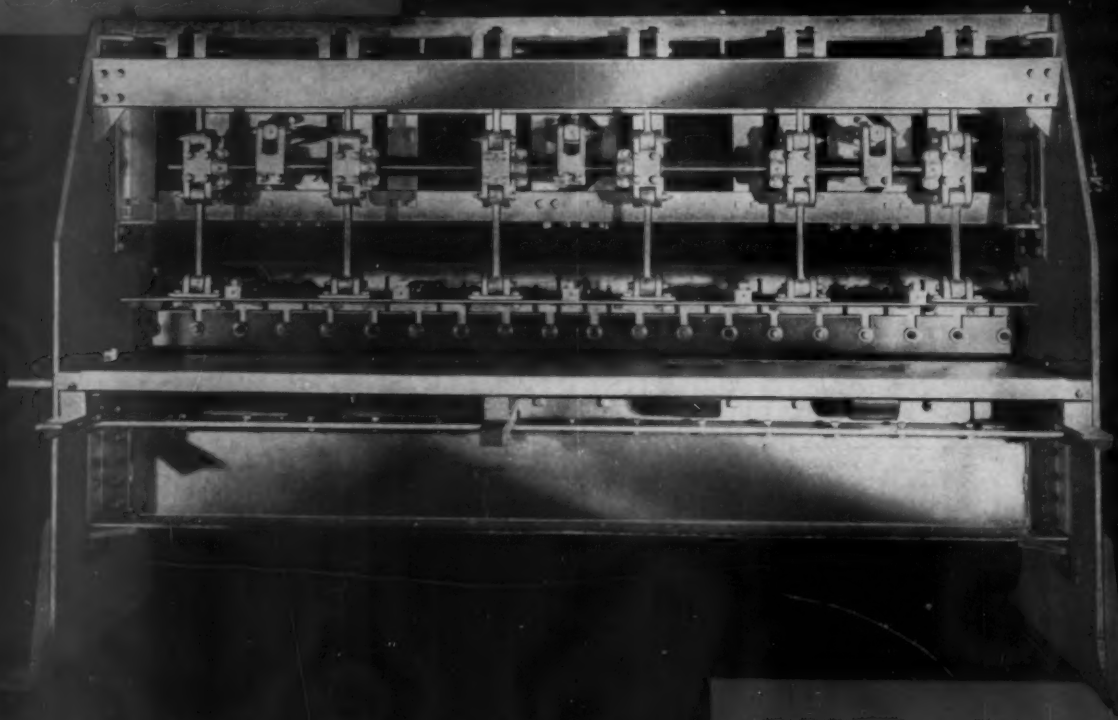
MAKERS OF HYDRAULIC PRESSES AND VALVES • FIRE HYDRANTS • CAST-IRON PIPE • GATE VALVES • GAS PRODUCERS • ACCUMULATORS

GREATER VENEER RECOVERY

Achieved with the
ELLIOTT BAY SEMI-AUTOMATIC CLIPPER



FOR ALL VENEER OPERATIONS

Greater efficiency in veneer cutting is introduced by the Elliott Bay Semi-Automatic Clipper, proved by years of successful operation in many Douglas fir, pine and hardwood plywood factories.

Plant space is conserved as long storage trays are unnecessary; the Elliott Bay Clipper can be short-coupled to the lathe, with which it is synchronized at lathe speed.

Tearing of veneer is eliminated, thus saving raw material; the clean-cutting clipper knife operates against a long-lasting copper shear bar.

Push button controls afford accurate selectivity of veneer of varying widths. The advanced and tested Elliott Bay Clipper is of all-steel, precision construction. Ease of installation and minimum upkeep demonstrated repeatedly.

SAVES SPACE
FAST-ACTING
ACCURATE

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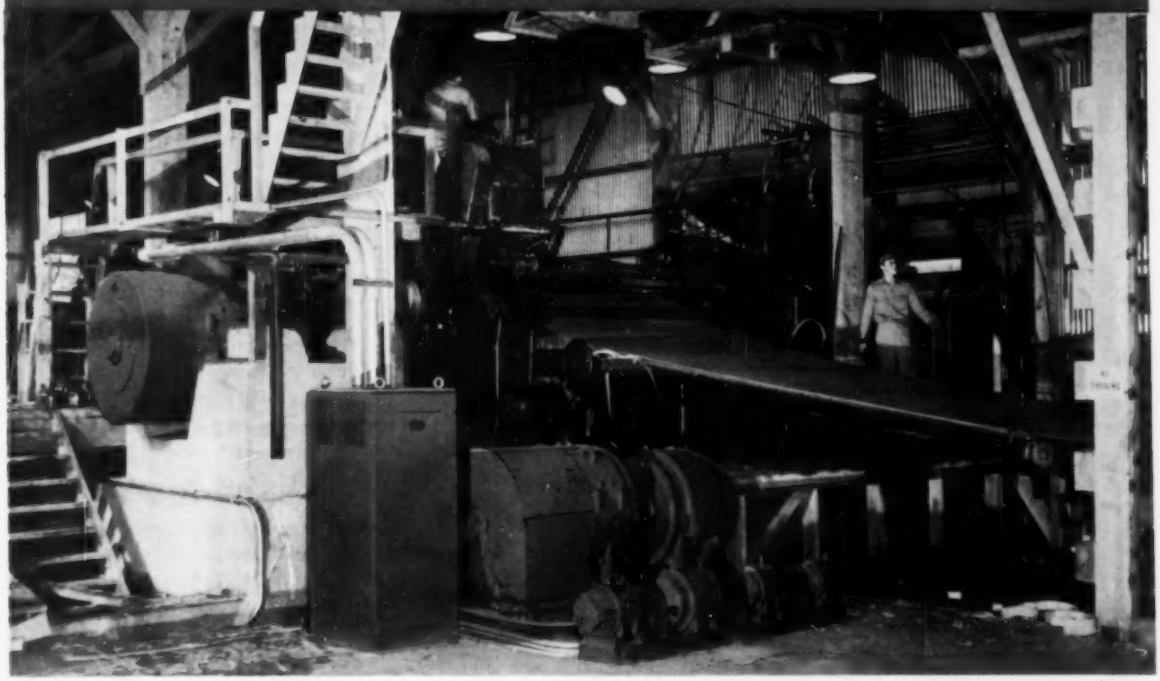
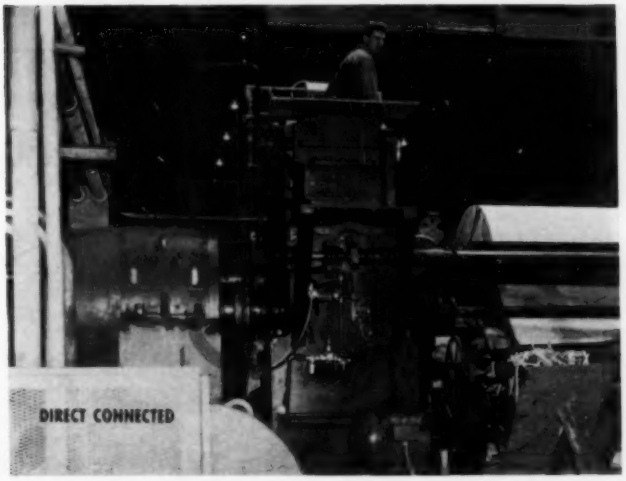
Sales Representative: WIENKER MACHINERY CO., Maritime Bldg., Seattle 4, Washington

DIRECT CONNECTED HEAVY DUTY DRIVE

The Hillman "All Electric"



- 150 Horsepower, direct connected to your 110" lathe giving up to
- 600 feet per minute constant production with
- 10 to 1 continuously variable speed range
- Anti-friction bearings throughout all units which are
- All late model machines
- All standard parts
- Full year guarantee
- Power package unit also available
- Prompt delivery



Our custom drive is engineered to power your lathe for maximum production and minimum maintenance

"C" KIRK HILLMAN CO.

3201 First Avenue South • Seattle 4, Washington

ELiot 6561

CARRIAGE DRIVES **TRAY SYSTEMS**

Industry Offers Specialties

(Continued from page 116)

ing up such products as furniture, cupboards, radio and TV cabinets, artillery shell containers, paper rolls, speaker mounts, boats, lockers, etc.

The Div. plant has a large number of expensive specialty machines for precision manufacturing, including double end tenoner, multiple boring machine, circle cutter, band saw, radial cut-off saw, pedestal router and radial arm router, hand router, punch press and multiple rip saw.

Special advantages of the CMD are: a saving in freight costs (no waste or trim shipped) and uniformity of product. The Div. uses Cascades regular DFPA grades, plus Lebanite hardboard and Lebanex, (plywood core with Lebanite face).

Other Specialties Are Varied

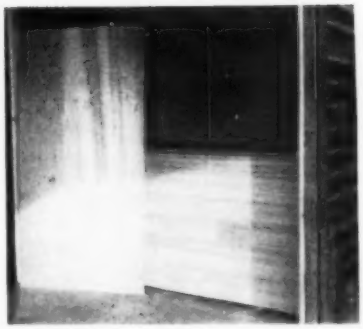
• The natural beauty of redwood is highlighted in a number of specialties produced by M & M Wood Working Co., large Oregon plywood manufacturers. M&M also is pressing Philippine mahogany, African mahogany, oak, walnut, birch, Idaho white pine, beech, cedar, maple and Douglas fir specialties.

Redwood panels are also grooved to provide a shadow pattern similar to lapped siding. Another technique used to achieve textured patterns is that found in the fir and redwood "Plyweave." Plyweave is embossed under heat and pressure; a chemical reaction within the wood provides a hard and dense surface.

• At the United States Plywood Corp. lumber operations at Redding, Calif., a new specialty lumber product has been introduced. It is called "Surfplank." It is a textured product, and the manufacturer states that it has met with excellent acceptance since its debut last year.

It is described as an ideal panelling for dens, play rooms, etc., and can be applied either horizontally or vertically, to wainscot height—or full room height. Surfplank has also been applied in herringbone form.

• The National Plywood Co., a co-op on the Olympic Peninsula at Beaver, is gradually building itself into a well-integrated plant with a wide range of types and grades of panels possible, notably using western hemlock and Sitka spruce. During 1955 a new chipping plant was installed; pulp chips are sold to a paperboard mill at Port Angeles.



Quality Sheathing Popular

• The Polson Plywood Co., Inc., of Polson, Mont., reports that its pine plywood sheathing has steadily gained acceptance in the construction industry, competing very favorably with other species of panels.

The picture above shows a sheathing panel that is part of a rail shipment from the Polson plant. So far the plant has concentrated on production of sheathing C-D grade interior; a sanding operation is anticipated for the future.

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Empire Plywood Company
Medford, Oregon

Willamette Valley Lumber Co.
Dallas, Oregon

Bandon Veneer & Plywood Co.
Bandon, Oregon

Multi-Use Panel Corp.
Eugene, Oregon

W. A. Woodard Lumber Co.
Cottage Grove, Oregon

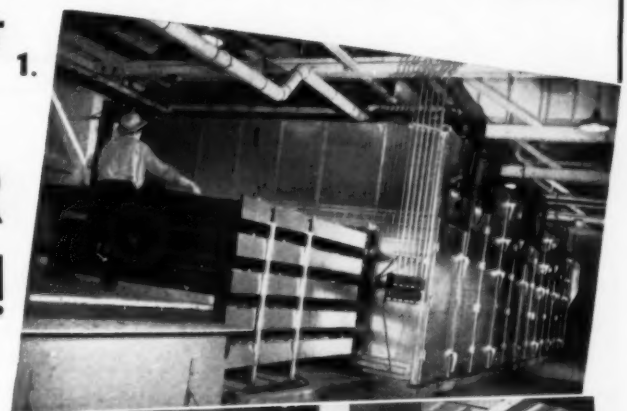
Bohemia Lumber Company
Culp Creek, Oregon

Simpson Logging Company
McCleary, Washington

Yamhill Plywood Company
McMinnville, Oregon

Hub City Plywood Co.
Albany, Oregon

1.



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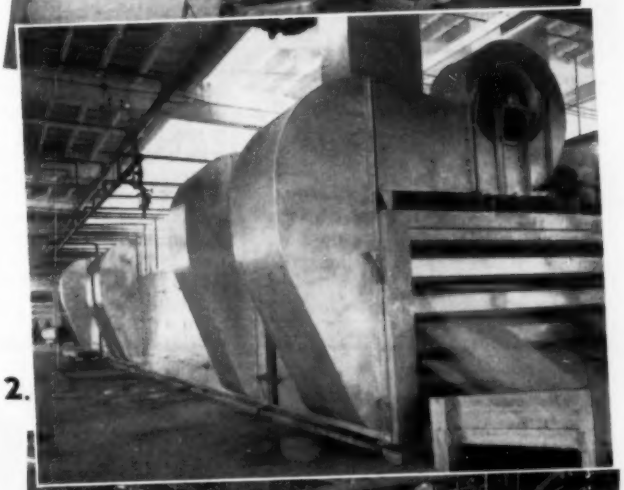

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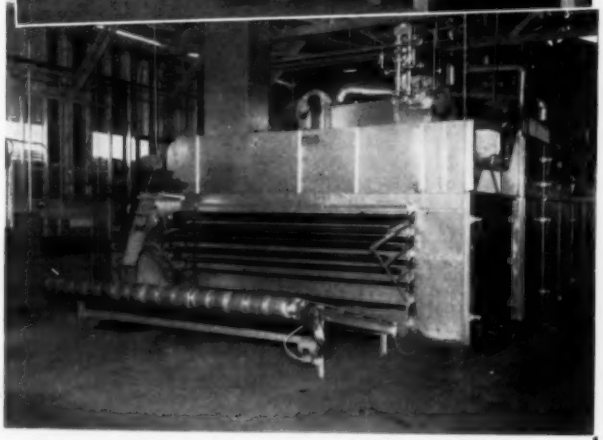

(1) Five-deck 12-section Moore Cross-Circulation steam heated roller veneer dryer, MacMillan and Bloedel Limited, Vancouver, B. C.

(2) Five-deck 12-section Moore Longitudinal Circulation steam heated roller veneer dryer, The Long-Bell Lumber Co., Weed, California.

(3) Five-deck 8-section Moore Cross-Circulation direct gas fired roller veneer dryer, Hub City Plywood Company, Albany, Oregon.

Steam heated or direct fired, there is a Moore Roller Veneer Dryer designed and built on the Pacific Coast for your requirements.

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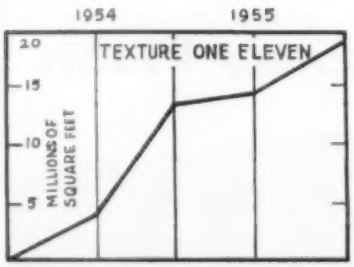
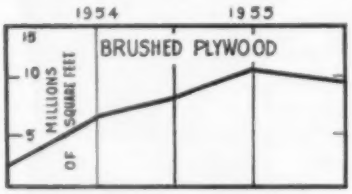
Plywood

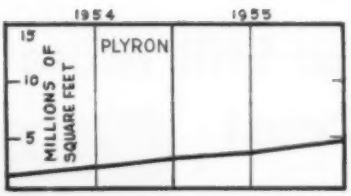


TEXTURE ONE-ELEVEN:	total production
1954	17,951,960 sq. ft.
1955	33,488,167 sq. ft.



BRUSHED PLYWOOD:	total production
1954	14,822,792 sq. ft.
1955	20,570,193 sq. ft.

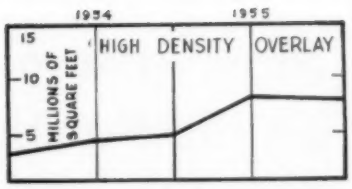
• The trend to cooperative ownership and management continues, with the Walton Plywood Co. plant at Everett, Wash., turning over the keys to employee shareholders during 1955. The survivor concern is now called Washington Plywood Co.



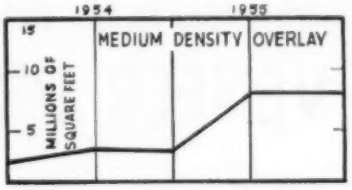
PLYRON:	total production
1954	3,496,228 sq. ft.
1955	7,556,351 sq. ft.

• Simpson Logging Co., with plywood plants in Shelton and McCleary, Wash., has entered into scarfing of panels and are now in the boat plywood market. This company is carrying on developmental work in the specialties field and expects to offer more new products in the future.

• Shan-Tong, as manufactured by Astoria Plywood Corp., Astoria, Ore., and certain other fir plywood mills, is being promoted as an interior beautifier for homes, stores and offices. Several new developments have been made in the finishing of Shan-Tong, which carries an embossed Oriental pattern. This specialty can be stained, varnished or painted to blend with the surrounding color scheme. Another feature is that unskilled home workers can turn out a professional-looking job—nails and joints do not show through the pattern.



HIGH DENSITY OVERLAY:	total production
1954	10,295,474 sq. ft.
1955	13,386,694 sq. ft.



MEDIUM DENSITY OVERLAY:	total prod.
1954	6,417,005 sq. ft.
1955	14,158,307 sq. ft.

• Rainier Plywood Co., Tacoma, Wash., has recently switched over from predominantly sheathing production to a range of all the grades. They are now pressing up special panels with maple faces. This firm is one of the first in the industry to install gas veneer drying facilities.

MIXED CARS a specialty

Mixed carload shipments of Plywood and Lumber from the Emerald Empire is an added service for our customers. Also, large surfaced timbers.

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VENEER JOINTER

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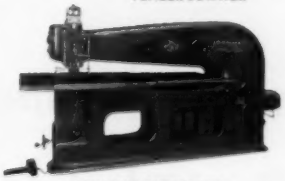
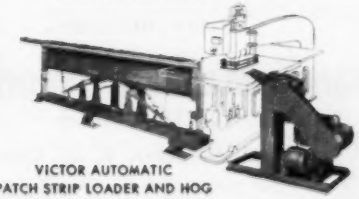
GREEN VENEER CLIPPER



RAIMANN AUTOMATIC
VENEER PATCHER



VICTOR AUTOMATIC
PATCH STRIP LOADER AND HOG

Here is a recent installation showing one man handling the whole sizing operation.

The DURAND Automatic Panel Feeder

Here is the answer to one of your big production problems. This unit, now in successful operation in many plants, will speed up your production and drastically reduce your sizing operation cost. It can be used with sanders, skinner saws and planers and is *guaranteed* against panel breakage.

Why not see the Durand Automatic Panel Feeder in operation? Write for names of plants now using this Panel Feeder or, if you prefer, one of our engineers will gladly call and help you analyze your handling and feeding problems.

Manufacturer:

Durand Machine Works Ltd.
101 11th Street
New Westminster, B. C., Canada

Sales Representatives:

Conway & Fields Sales Co.
1623 S. E. 6th Avenue
Portland 14, Oregon
Phone: BE 2-4174

Production Booms in B. C.

WITH NEW MILLS COMING into production, British Columbia's output of plywood—practically all Douglas fir—climbed to a new high of 705,000,000 square feet ⅜ inch basis last year, and indications are that it will go considerably higher in 1956.

Rise in production from 1954's 550,000,000 square feet was influenced by completion of the $1,000,000 modernization program at Canadian Western Lumber Co. at Fraser Mills, full operation of the new Mount Baker Plywood Co. at New Westminster, and Evans Products Co. near Vancouver, and entry into the plywood field of Sooke Harbor Lumber Co., formerly a veneer producer. Late in the year two new veneer plants entered the picture—M. B. King Lumber Co. in North Vancouver, a division of Fullerton Lumber Co., and Savona Timber Products, operated by Don King.

Practically all of the eight existing plywood plants carried out improvement programs during the year. J. R. Murray Ltd., was taken over by Western Plywood Co., which announced start of construction on a new plywood plant at Edmonton, Alberta.

IN THE 20-YEAR PERIOD from 1936 to 1955 volume of plywood manufactured annually in British Columbia has increased twentyfold. A significant feature of this expansion has been the industry's almost total dependence on domestic demand during recent years. Since 1948, export of plywood has almost ceased as a result of dollar shortages overseas and restrictive tariffs. In 1945, for instance, 70 percent of B.C.'s Douglas fir plywood was exported; last year, less than 10 percent was exported.

Fortunately, the domestic market has grown sufficiently to absorb production and provide an incentive for expansion. Production has increased fourfold since World War II; at the same time, Canada's per capita consumption has increased nine times, from five square feet per capita in 1945 to 45 feet in 1955.

In recent months there have been signs of a revival of plywood exports to the United Kingdom, and a promotion campaign is being carried out with that end in view.

WHILE STANDARDS of utilization have changed so that logs formerly regarded as sawlogs are now being classified as peeler stock for plywood production and technical improvements have been carried out to make it possible to use varying sizes of logs, one of the fundamental problems of the industry is the limited supply of suitable Douglas fir in the region most readily accessible to the mills.

Douglas fir in the Vancouver forest district, which includes Vancouver Island and a part of the lower mainland, is being overcut by 117 percent yearly, and this applies particularly to the east coast of the island. Seven Douglas fir trees are being cut each year where only three are the crop. These trees, almost all going to sawmills or plywood mills, average over 300 years old. Apart from its importance to the plywood industry, Douglas fir has been the mainstay of the province's lumber export trade.

British Columbia Plywood Production

1941-1955—Square feet, ⅜-inch basis

1941—173,000,000	1949—300,000,000
1942—184,000,000	1950—349,000,000
1943—195,000,000	1951—406,000,000
1944—218,000,000	1952—464,417,000
1945—204,000,000	1953—590,000,000
1946—224,000,000	1954—663,000,000
1947—296,000,000	1955—854,000,000*
1948—338,000,000	

*Preliminary estimate.

LODGE & SHIPLEY is producing Columbia Hydraulic Presses for the woodworking industries that are equal or superior to any other. Their rigid design, trouble-free hydraulic system and honest ratings assure dependable performance on any press job.

In the production of plywood, veneer, hardboard and other laminated products, there is no room for an operation that might fail. The many Columbia features guarantee more production, higher quality and greater return on your investment.

Write for new FREE Bulletin No. HP-10 and name of your local Hydraulic Press distributor.

THE Lodge & Shipley COMPANY

3060 Colerain Avenue • Cincinnati 25, Ohio

Columbia Hot Plate Press 20 Daylight, Platen Size 50" x 102"

Plywood

Canadians Up Plywood Quality

Government laboratories continue to search for better plywood panels

IT IS INADVISABLE to dry Douglas fir veneer at extremely high temperatures for extended periods.

This is one of the findings made at the Vancouver, B. C., plywood unit of the Forest Products Laboratories of Canada. An investigation into the effect of drying temperature upon gluing properties of Douglas fir veneer was completed, while another research study was begun to determine effect of high-temp. drying on the strength of fir veneer in bending.

Research continued on the development of a technique for the prediction of the durability of plywood. A study of the bearing strength of nails in plywood was completed.

A paper entitled "Bond Strength as Indicated by Wood Failure or Mechanical Test" was published. This paper sets forth the results of research into the theory and practice of estimating the bond quality of glued wood joints.

BEST WAYS OF CUTTING problematical peeler logs of curly grained yellow birch and of elm were special projects at the Ottawa branch lab, which published its findings of 1955 in a number of valuable reports for industry.

Other projects at Ottawa include fundamental research on veneer cutting to obtain information on the nature of the stresses developed in the veneer log and the veneer at the knife edge by the action of the knife and nose bar during cutting.

A project was completed on the efficacy of tenderizing and loose cutting veneer in reducing the warping of plywood. The results of this work indicate that neither tenderizing nor loose cutting of core or of cross-band veneers was effective in reducing warping.

AFTER AN EXTENSIVE series of veneer-cutting experiments, a technique was developed for rotary cutting veneer from curly grained yellow birch. Cutting trials made in a commercial mill confirmed the feasibility of using this technique in industry. A publication covering the work was prepared.

A project on the veneer cutting properties of elm was completed. In this work the optimum lathe settings and cutting temperatures were determined and minor studies were made of the drying, gluing and finishing characteristics of elm veneer. A report for publication on these studies is being prepared.

Measurements of the dielectric properties of liquid resin glues were continued employing the technique developed during the previous year. This work included evaluation of their dielectric constant and conductivity. In addition, the variation of these properties with temperature, frequency, pot life and the amount of catalyst added was investigated. A technical paper based on these studies is being prepared.

AN INVESTIGATION is being carried out on the warping which frequently occurs in furniture panels manufactured by bonding a sheet of plywood to one side only of a light lumber frame. Typical panels have been fabricated employing components at different moisture contents and a variety of different plywood constructions. The amount of bowing which occurs in these panels under different conditions of exposure is being measured.

Work was continued on the development of suitable methods for testing the strength and durability of the various types of wood adhesives. In investigations on the durability of plywood adhesives, inspections of outdoor exposure panels bonded with a variety of adhesives were continued at two-month intervals. A group of matched specimens which have been aging under indoor conditions have been tested after a six-year aging period. All results obtained over a period of six years are being analyzed.

• Technically, the industry made strides in many scattered points. Perhaps the very greatest trend is the acquisition of **newly improved models** of existing machinery and of **additional units** to provide for greater capacity within the same plant.

Everett Plywood & Door Corp., said to be the largest coop in the industry, during 1955 installed a new 20-opening Columbia hot press. This gives them 100% hot press production, as they have one 15-opening Williams-White press and one 10-opening Francis. New patching machines have been recently added.

Everett Plywood & Door, recently took a step similar to moves made in the past by several other domestic producers in making public plans to begin a Philippine Islands operation. Through purchase, they acquired interest in the Lianga Logging Co. on the east coast of Mindanao Island. Machinery is in the process of being shipped.

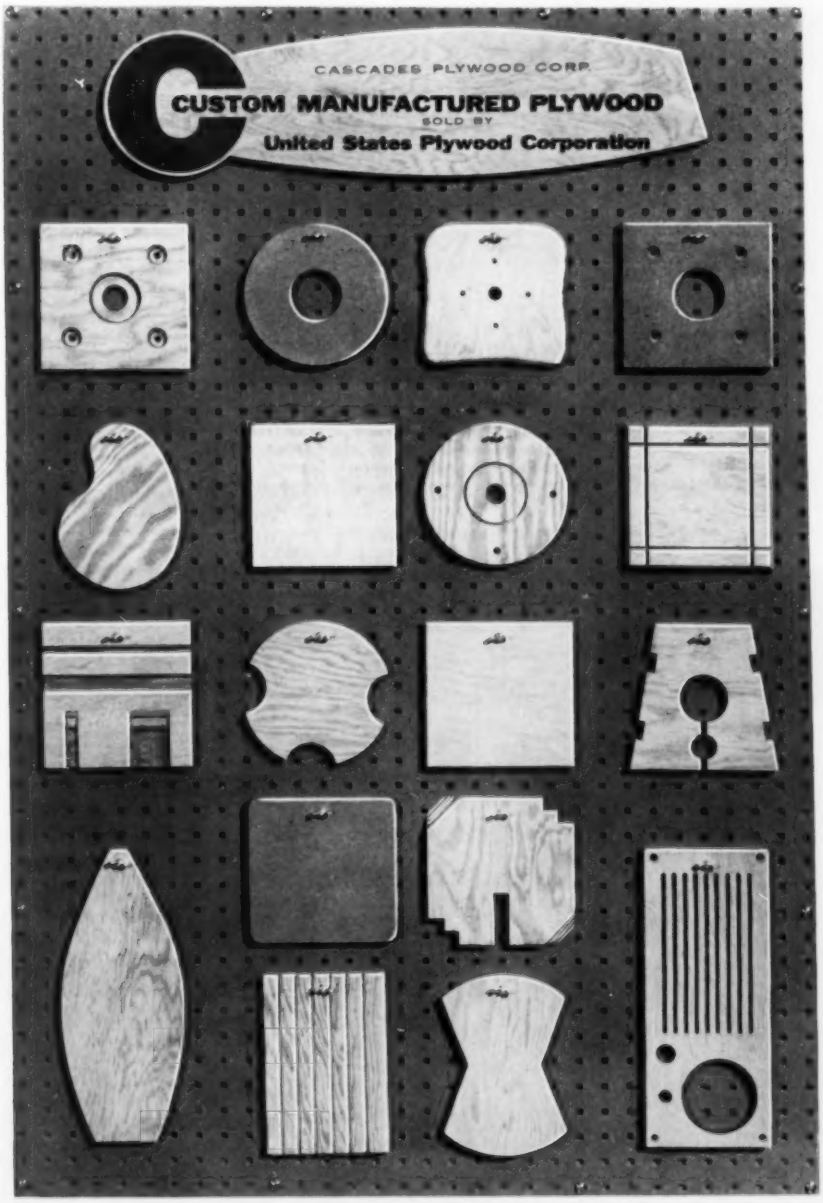
They will have a sawmill and logging operation, utilizing timber in a four billion bd. ft. holding. Logs and lumber will be shipped to Everett and later it is in the long-range plan to install veneer and plywood equipment, and eventually a new pulp mill.

It pays to use Pa-Veneer

Lane Laminators, Inc.

Producers of "Pa-Veneer," a paper and veneer laminate, to provide industry with a quality board of many uses.

Plant and Office: 3150 Prairie Road EUGENE, OREGON Mailing Address: P. O. Box 3126



making wood more useful

This display is being used by U.S. Plywood Corporation's representatives to show what our Custom Manufacturing Division can do to make wood more useful. And we might add, to make it cheaper to ship, by cutting out the waste right where the plywood is made. In addition to the standard grades of fir plywood, the plant also uses *Lebanite* hardboard and *Lebanex*, plywood core with *Lebanite* faces. These materials can be cut to almost any size or shape, exactly to customers' specifications.

CUSTOM MANUFACTURING DIVISION
OF THE
Cascades Plywood Corporation
Factories: Lebanon, Oregon
General Offices: Public Service Bldg., Portland, Oregon

Plywood

New Resin Surfacing Protects Ply Panels

• Development and application of a new liquid plastic protective wood finishing is reported by Saro Laminated Wood Products, Ltd., located on the Isle of Wight, England.

Known as "SaR-Rez" it is said to be resistant to heat, grease, alcohols, ink, chemicals, etc. and to be hygienic and easily cleaned. Different types of finishes may be achieved, e. g., glossy, satin, and it may be applied with spraygun or brush. There are 10 different colors available.

Fnishes are available from the manufacturer; however, Saro Laminated also supplies panels already finished in any size up to 4x8 feet. The company offers a complete technical consulting and research service to users of this plastic.

SAR-REZ HAS BEEN used extensively in many applications where tough, abusive treatment is normal, such as seat panels in England's underground railways (above), in jet transports, ocean liners, and cut-up specialty items.

Mexican Plywood Production Is Gradually Increasing

• Plywood production in Mexico amounted to 65 million square feet ¼-in. basis in 1950. There are now seven major plywood plants in the country, three in the pine region, three in tropical region and one in Mexico City.

There is a number of smaller mills producing minor amounts of plywood, veneer for baskets, boxes and crates. Construction plywood accounts for bulk of production but more and more decorative plywood is being pressed.

Species used include pine and oak, common for construction plywood; mahogany, Spanish cedar and prima vera for decorative panels. Exports, mostly Spanish cedar, were over 8,000,000 sq. ft. in 1950; U. S. was major buyer.—Source of information: Robert K. Winters' report in U.S.F.S. Timber Resource Review 1955.

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Your Key, Sir!
. . . to the finest of design, service,
and apparatus to improve
the production of your veneer mill
Republic ELECTRIC & DEVELOPMENT CO.
3532 STONE WAY • SEATTLE
Leading designers and suppliers of
LATHE DRIVES • TRAY SYSTEMS • SPECIAL CONTROLS

Digest of New Ways Plywood Is Used in Building

NEW BUILDING TECHNIQUES worked out by builders and architects alike have continually accounted for new sales potential of fir plywood. It is already estimated that construction of a residential and nonresidential nature, absorbs up to 52 per cent of the industry's annual output. Herewith is a selection of some of the latest innovations taking place throughout the country today.

Overlaid Siding Used

• Savings in costs ranging from $15 to $20 per 1,000 square feet of wall surface were achieved by Austin Co. contractors on a new office building for Boeing Airplane Co., Seattle.

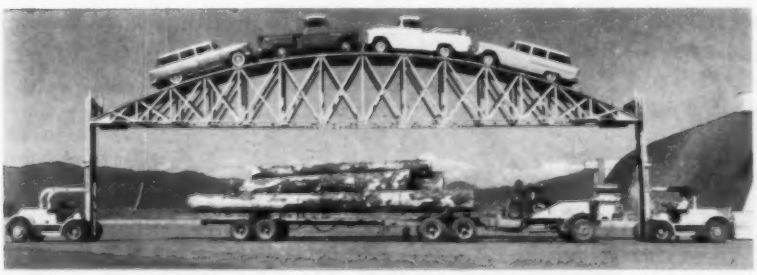
It was done by applying ½" overlaid fir plywood siding directly to the studs as combined siding-sheathing. Conventional wood framing was used with studs 16-inches on center to which the 4 x 8-foot panels of overlaid plywood conformed with virtually no waste or cutting. The lower part of the wall rises eight feet in a smooth flush surface.

New Roofing System

• After two years of intensive investigation, Douglas Fir Plywood Association has come up with recommendations for the application of unsurfaced fir plywood roofs on farm utility structures—and at big savings.

This new approach works on any roof with a minimum pitch of 5 in 12. It is achieved by applying ⅜" ext. fir plywood (exterior C-C is the most economical grade and is entirely adequate) across rafters on 24-inch centers. The plywood is laid in courses with the first course starting at the eave line.

Subsequent courses are lapped along the length of the building at least 4-inches. Shingle backers are used as shims at horizontal joints to provide a solid nailing base for the plywood. Side joints where panels simply butt are then covered with battens with at least a 3-inch overlapping on the succeeding batten. Before application of the battens, a nondrying mastic bead is applied in the joint and at the ends of the battens.



Revolutionary Plywood Truss

• Diamond Lumber Co., Portland, Ore., has developed this revolutionary bow-string plywood truss that promises to cut construction costs in large one or two story buildings to otherwise impossible lows.

On one warehouse involving 86,400 square feet, the total reported building cost is $4 a foot. At the same time, it points the way to many new potential uses for long-length panels.

The key to the promised construction economies lies in the use of a continuous panel of fir plywood acting as both top chord of the truss and as the roof deck of the building. It's done by stressing the plywood in a curve to provide tremendous additional strength.

Designed by Roy Gould, president of the company, the truss has been demonstrated in use in Diamond Lumber's big Johnson Creek warehouse in Portland. The building involves 360 of the new trusses which have a clear span of 60-feet.

Already the system has been proved in trusses 80-feet long and it is practical for trusses with spans up to 120-feet. Although first used in a warehouse the system should work equally well in schools, factory buildings and other forms of construction.

Extensive Use of Plywood Speeds Mass Homebuilding

• A 300-home tract project built in South Pasadena by Trend Homes, Inc., ate up more than half a million feet of fir plywood.

The substantial volume of Texture One-Eleven and structural Plyscord panels used in the house (see above picture) makes it possible to save from 2½ to 3 weeks building time per unit.

Part of the savings are achieved in the roof decking where ⅜-inch Plyscord is used over supports spaced 24 inches o.c. now allowed in homes carrying FHA insured mortgages. Use of T 1-11 as combined siding sheathing accounts for other substantial savings.

Vaulted Plywood Roofs

• Paul Rudolph, Sarasota, Fla., has developed a lightweight vaulted plywood roof, which weighs only about 8½ lbs. per sq ft, compared with the conventional weight of 50 lbs.

The most interesting application is this second-story small house built at Siesta Key by general contractor Paul Azsada. The house stands on eight double posts over a ground floor barbeque area. The roof of the house consists of three plywood vaults running the length of the structure and is supported on posts over which are laid longitudinal beams made up of 2x10's faced on each side with a 2¾ by 5½-inch piece.

Two sheets of ¼-inch 4x8-foot plywood glued and nailed together and lapped by 2-feet were bent over a temporary frame bolted down to the supporting structure. The panels were bent so they provide a vault 6-feet 10-inches wide, with three vaults forming the entire roof.

F-900—GVW 29,000 lbs.; GCW 60,000 lbs.

new long-life engine design

Agile heavy-duty "Snub Nose"

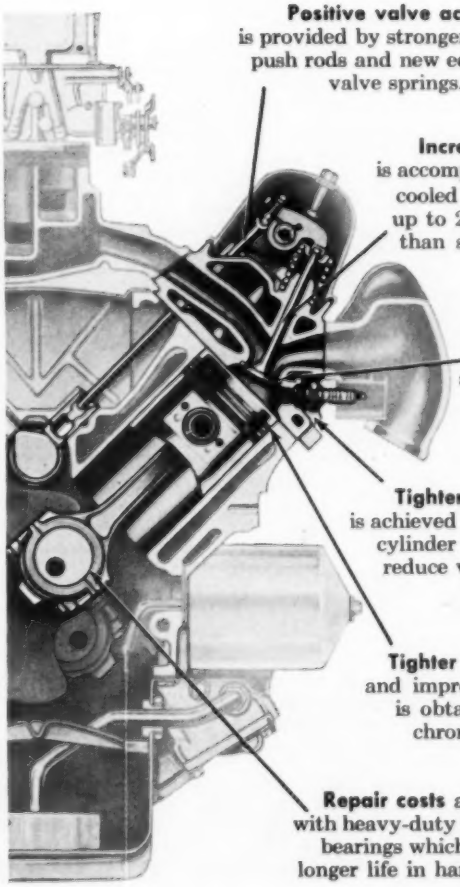
a real time saver—New Ford C-750

● New power and maneuverability of this Ford Cab Forward BIG JOB cuts hauling time on every run—makes giant cargos seem lightweight. You have a choice of two gas-saving Short Stroke engines. Either the 175-h.p. *Cargo King* V-8 or, the 186-h.p. *Cargo King* Special V-8.

You have new engine advancements for longer life (some explained and illustrated at the right).

New safer tubeless tires, 5-speed Synchro-Silent transmission and tachometer are standard equipment, at no extra cost. Power Steering and air-over-hydraulic brakes are available at extra cost.

New *Driverized* Cabs for driving comfort and convenience have *Lifeguard* Design safety features found in no other truck. Lifeguard steering wheel helps protect driver from steering column; Lifeguard door latches help keep doors from jarring open in case of accident.



Positive valve action is provided by stronger, tubular push rods and new equal-coil valve springs.

Increased valve life is accomplished with sodium-cooled exhaust valves—up to 225° cooler-running than solid-stem valves.

Longer valve and seat life are the result of solid tungsten-cobalt alloy facings and exhaust valve seat inserts.

Tighter valve closing is achieved with stress-relieved cylinder heads that help reduce valve distortion.

Tighter compression seal and improved ring durability is obtained with thicker chrome-plated rings.

Repair costs are lower with heavy-duty copper-lead bearings which provide longer life in hard service.

F-100—8-ft. Pickup—GVW 5,000 lbs.

C-750—GVW 21,000 lbs.; GCW 42,000 lbs.

Ford saves you money with

FORD EXPERIENCE IN HEAVY DUTY ENGINES PAYS OFF

- **Much longer peak engine performance!**
- **Much less DOWN-TIME on the job!**

Ford Trucks for '56 save you money right from the start. And, they keep on saving with their extra-sturdy, long-life engine design.

For instance . . . Ford Engineers have now introduced into all heavy-duty engines the greatest valve advancements ever. As an example, see the exhaust valve in diagram on right page. The valve stem is hollow and partially filled with powdered sodium. When the sodium gets hot, it *turns into a liquid.* As it moves up and down, it carries heat away from valve head—*allows it to operate up to 225° cooler!* Result: a cleaner-running, more burn-free, longer-lived valve face.

Ford's long-lasting engine design pays off for you in every way. You save money on parts replacements such as piston rings and bearings. You save on shop labor—extend time between preventive maintenance jobs like valve adjustments, valve grindings, compression tests, ring jobs and the like.

And you can save on driver costs if you can keep trucks out of the shop and on the road. Yes, you save in every way when you get more work done per truck!

There's a Ford Truck for every trucking job. Before you buy your next truck, Test Drive a Ford Economy Truck.

FORD TRUCKS LAST LONGER

Certified by independent insurance actuaries for the ninth consecutive year! Studies of over 10,068,600 current license registrations show that Ford Trucks last up to 9.9% longer than any of the other 4 leading truck makes!

CORVALLIS PLYWOOD CO.

CORVALLIS, OREGON

HIGHEST QUALITY

DOUGLAS FIR

★ SANDED PLYWOOD

★ SHEATHING

★ INTERIOR

★ EXTERIOR

★ CREZON

MARY'S PEAK VENEER INC.

CORVALLIS, OREGON

Industrial Uses Increase

(Continued from page 99)

time consolidated shipments of a variety of products in one car.

A sandwich-type construction is used in floor, walls, doors and ceiling; this sandwich consists of fir plywood, Dow Chemical's Styrofoam as a core, another layer of plywood and an overall facing of Fiberglas cloth polyester.

Plywood Pallets

Pallets, one of the oldest wood products dating back to Egyptian times, are big business to George N. Canlis of Long Beach, Calif.

Canlis, a restauranteur by trade who became interested in pallets during World War II, established the Long Beach Pallet Sales & Equipment Co. in 1948 which consumes 200,000 square feet of plywood annually.

Canlis' business has many aspects of a new-products industry because he has had to develop numerous pallets for specialized applications. For instance, where the conventional pallet comprises boards nailed together at intervals of several inches, he makes many pallets from ¼" to 1" fir plywood—for use in handling potatoes, grain, and many other products that couldn't be loaded on platforms with large apertures.

Similarly he has devised "expendible" pallets—which are made from such low cost materials as ⅛" plywood—for use in making one-way shipments.

Some of the pallets are custom-built. For example, one 8-foot by 14-foot unit was recently made for use in hoisting a racing car aboard an airplane. However, most of Canlis' pallets are standardized products with multiple applications in a variety of industries.

The company makes and sells about 6,000 plywood pallets of all types each year. The average plywood pallet consists of a panel decking fastened to 2x4-inch or 4x4-inch runners with counter-sunk drive screw nails.

Plywood Templates

Because it can withstand the mighty impacts of a drophammer, fir plywood is saving many thousands of dollars on the cost of tooling for the progressive forming of aircraft parts at Ryan Aeronautical Co., San Diego, Calif.

Progressive forming dies of conventional types are well worth their cost where many thousands of identical sheet metal parts must be manufactured. Even the least expensive cast metal tools can make airplane components extremely costly. Therefore, Ryan has greatly reduced the cost of fabricating many sheet metal parts by using plywood tooling components.

According to Ray Hoermann, foreman of Ryan's pattern shop, plywood templates have been made from standardized sheets of exterior plywood with thicknesses ranging from ¼" to ¾". And because they're inexpensively fabricated, they reduced progressive tooling costs more than 75 per cent in forming parts with depths of about 12".

Classroom Shortage Eased

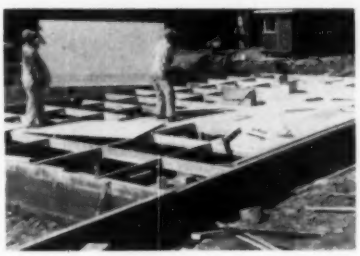
• Earthquake resistant classrooms depending upon fir plywood for most of their strength are being built at South Pasadena, Calif. Builders claim that sums saved by using plywood are estimated at about 10% of the over-all building cost in several instances. About one third of the manhours usually required to erect comparable wood structures is being saved by the use of fir plywood.

At Fort Lauderdale, Fla., officials turned to one-room, portable classroom buildings as a solution. One such portable, dominated by fir plywood, was built in ten days by the school maintenance department at a cost of $2,800. Local people were particularly happy with the results of using exterior type fir plywood, ⅝" thick, on exterior wall siding. The interior walls of all were ¼" panels.

New Subfloor System

• Ken Larsen, owner of the Continental Construction Co. in Seattle, has worked out a floor system involving 1-inch fir plywood as a combined subfloor underlayment over a special grid system with supports 4-feet on center. The saving: approximately $500 on a $15,000 unit.

Due to his pioneering development work and publication through DFPA



of the results, the system has gained increasing acceptance throughout the country with scores of builders.

A typical convert is homebuilder Glen Thorpe of Billings, Mont. Thorpe figures an actual cash saving of about $300 per unit, as well as a saving of two weeks' time in construction.

The DFPA is making a concerted effort to get national FHA acceptance on a nation-wide basis—already a fact in some local areas.

Plywood "Blanket" Developed

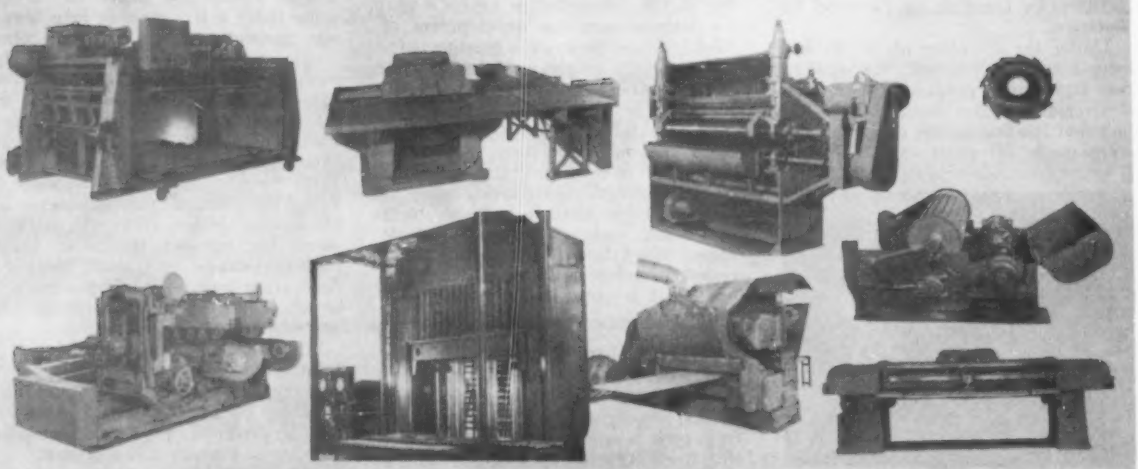
• One of Long Island's contracting firms, H. M. Gorelick, Inc., Contractors, has developed a system for "blanketing" a house in applying fir plywood sheathing that provides a worthwhile saving in time and labor costs.

It involves covering the entire surface of walls to be sheathed with plywood without regard to window and door openings and then cutting out with an electric saber saw from the inside. Time required for covering a total of 432-feet of wall surface and cutting out the windows is 1-hour and 35-minutes for two men.

THE TRADEMARK OF QUALITY

MTC

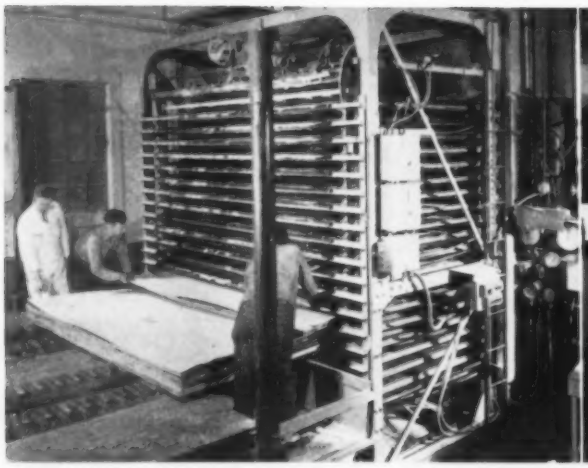
PLYWOOD & WOODWORKING MACHINERY



TALLMAN MACHINERY COMPANY, INC.

906 Elliott West • Phone ALder 5755 • Seattle 99, Washington

REPRESENTED IN WESTERN CANADA BY WYNNE EQUIPMENT, VANCOUVER, B. C.



DFPA ACTIVITY RANGES from quality control right in the various member plants (such as the inspector above, who is tagging a test panel as it enters hot press) to advertising (r.).

CONSUMER PROMOTION requires specialists in many fields. For example the work going on here is the photographic phase of promoting do-it-yourself plans for fir plywood kitchen cabinets.

Truly a Golden Year!

1955's Golden Jubilee Celebration went hand-in-hand with record output

SPARKED BY ONE of the broadest industry sales promotion efforts ever attempted in the forest products field, sales of Douglas fir plywood in 1955 climbed to 4.9 billion feet, an increase of 28 per cent over the previous year. This was far in excess of the most hopeful predictions at the start of the year and undoubtedly it was due in large part to the general promotion of fir plywood carried out for the manufacturers by Douglas Fir Plywood Association.

Under the direction of W. E. Difford, managing director, the association launched a program keyed to an anniversary theme built around the fact that the first panels of fir plywood were made 50 years ago. The year 1955 was, for plywood promotion, the "year of the spectacular."

SPARKPLUGS behind the impressive traveling plywood show during late 1955 were W. E. DIFFORD (r.) DFPA managing director, who conceived the idea; HOE WESTON (c.), field promotion director; and EARL PENNINGTON, DFPA field representative, who supervised the show in 44 different locations.

Although it will be topped in 1956 by another concentrated promotion effort in mid-year, the Jubilee promotion was the biggest thing ever undertaken by the plywood industry. The results from editorial coverage and tie-in advertising were spectacular.

The 50 Golden ideas displayed at the show have stimulated new thinking in the entire design field. Of major interest was the development of Moké, a new decorative treatment for plywood (see article on Moké).

A number of the do-it-yourself ideas are being used by home craftsmen on the basis of new plans developed by the association. A storage wall idea in which Texture 1-11 is used horizontally to provide grooves for adjustable shelves is being built by others looking for new storage space. The latter idea has even penetrated to industry where at least one big plant is considering using it for storage bins.

ANOTHER BIG ELEMENT during the year was a traveling milltown show. This was a major program intended to demonstrate to the industry's own people the importance and the scope of the business in which they participate. The show was sent to 44 locations and before it was over, it had been seen by about 60,000 people including mill employes, families and friends.

Other DFPA advertising typified by dramatic two and three page ads in mass circulation magazines built up the lumber dealer as the nation's first source for plywood. Among other elements of the program was a more concentrated field force effort. At the same time technical work including product testing was keyed more closely to sales problems as evidenced by a comprehensive test program on comparative sign materials. The results of these tests, showing the advantages of fir plywood over steel, aluminum and fiberglass, were promoted heavily to buyers in this field.

The results of the association's overall promotion effort are clearly reflected in growth of sales. They increased in 1955 by a billion feet—just about 20 million feet weekly.

The association hopes to do the same thing this year only in a bigger way through new mediums heretofore untried on a national scale by the forest products industry. As May draws to a close, DFPA will break a $400,000 promotional, advertising and merchandising effort, keyed to the theme "You Can Afford Expensive Ideas With Fir Plywood". It will consist of a tightly planned merchandising kit for lumber dealers (that will sell plywood for outdoor things to build, built-in storage units and ideas for decorating and remodeling with plywood), plus television coverage and national magazine advertising.

At the same time the association is crystallizing several long-term promotion concepts involving new solutions to school construction problems utilizing fir plywood, plus new sales assistance to jobbers and retailers.

All this effort is in addition to continuing strong trade promotion and together is intended to stimulate additional growth in sales in 1956. The goal is 5.6 billion feet.

On another level, association techni-

(Continued on page 140)

It's a Natural!

LP-GAS PLYWOOD VENEER DRY KILNS OFFER 4 BIG ADVANTAGES!

1 Calor Gas substantially *increases* plant *production* and *capacity*...daily...monthly...yearly!!

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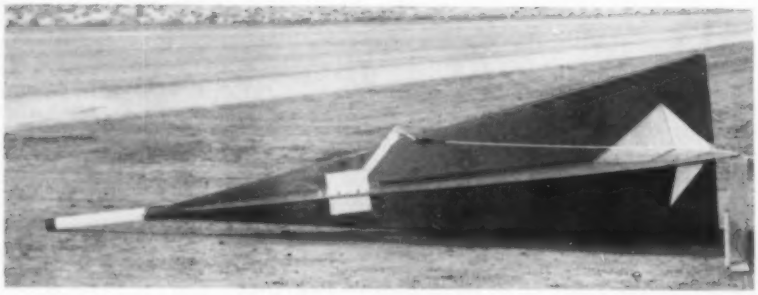
Plywood



U. S. NAVAL ORDNANCE TEST Station high speed dart tow target. (Official U. S. Navy Photo.)

Plywood Dart-Type Targets Offer Advantages

• Fashioned into a dart-shaped high speed aerial tow target, fir plywood has entered the jet age.

Navy and Air Force fighter pilots use aerial tow targets for target practice on training flights. The targets are pulled on mile-long nylon ropes behind the tow plane. Old-style targets were bulky and square, and created so much wind drag that it was impossible to tow them at high speed. But a new fir plywood target, invented by technicians at the Naval Ordnance Test Station at Inyokern, Calif., is shaped like a huge dart and flies jet-fast behind the towplane.

Both fighter pilots and navy test experts are enthusiastic about the new target. CDR. F. H. O'Brien, USN, Commander of Fighter Squadron VF-24 in Florida, said "This is the first opportunity we've had for real highspeed gunnery."

The dart is 14-feet long with fins that are four feet wide. It has a metal nose for ballast, and weighs 145 pounds. Carloads of Exterior-type A-A fir plywood are being used to build the darts at the Naval Air Development Test Center at Johnsville, Pa. and at other military installations. Experiments are also being conducted to test the advantages of overlaid fir plywood in building the targets.

The target's tow-line is attached to a pick-up loop that is stretched between two 12-foot poles like a volleyball net. The tow-line is then snatched from the poles by the tail hook of a jet plane traveling at over 150 knots only about 20 feet from the ground. Immediately after the pick-up, the tow plane pilot pulls the nose up and begins a 30° ascent. Then, it's a quick climb skyward for a game of high speed target practice.

Fir plywood's strength and light weight make it an excellent material for building this new target, according to Navy and Air Force test experts. A larger dart target, which will give aerial gunners better visibility, is now being tested.

New Suggested Grading Rules for Green Veneer

When veneer is bought and shipped on the basis of "Mill Run", the following is understood: At least 30% to be A & Ap (of which not over 50% Ap) and random widths not to exceed ⅓ of shipment.

When veneer is bought and shipped on the basis of "Sheathing", the following is understood: At least 50% C and random widths not to exceed ⅓ of shipment.

Defects	"A" Grade Sound Face	"Ap" Grade Patchab'e to Sound Face	"C" Grade Interior Face Ext. Core and Back	"D" Grade Interior Core and Back
Knots	Not Allowed	Not over 1" largest diam. and not more than 3 such defects per 12" of width.	Not over 1" largest diam. and not more than 5 per 12" in width.	Allowed
Knotholes	" "	"	"	Not to exceed 2½" largest diam.—any number.
Other Open Defects (incl. worm-holes)	" "	"	"	"
Pitchpockets	" "	Not allowed	Not over 1x2"	Not over 2x4"
Torn Grain	" "	" "	Not allowed	Slight
Rough Grain Lathe Checks	" "	" "	Slight	"
Rot or Decay	" "	" "	Not allowed	"
Pitchstreaks	Not over ⅜" in width and ½" length of sheet; and only if blending with color.	Not over ⅜" in width and ½" length of sheet; and only if blending with color.	Allowed, any amount	Allowed, any amount
Discoloration	Admitted	Admitted	" " "	" " "
Cracks	Limited in number and not over 3 in 54" and 1 in 27" sheets.	Limited in number and not over 3 in 54" and 1 in 27" sheets.	Tapering to a point and not wider than 1/16" and not extending over 24" in length.	Tapering to a point and not wider than ⅛" and not extending over 24" in length.
Splits	Only if tight and not over 12" in length in 54" and 27" sheets only.	Only if tight and not over 12" in length in 54" and 27" sheets only.	"	"
Smallest Width of Any Random Piece of Veneer	10"	14"	8"	8"

A CONSULTING FOREST PRODUCTS engineer from Portland, Ore., Mr. Jorg Bugge, recently presented a new set of grading rules for green, rotary cut Douglas fir and other western softwood veneers. The occasion was a section meeting of the Forest Products Research Society in Longview, Wash. These grading rules are presented here by THE LUMBERMAN for the study and consideration of the softwood plywood industry and are in no way to be considered as official. However Mr. Bugge's study of this important subject is especial'y timely because of the recently expanded growth of the green veneer industry.—THE EDITORS.

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- Lathe Loaders
- Clippers
- Grinders

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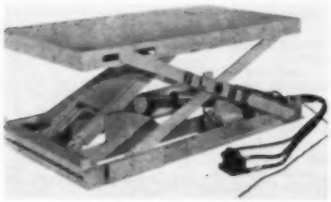
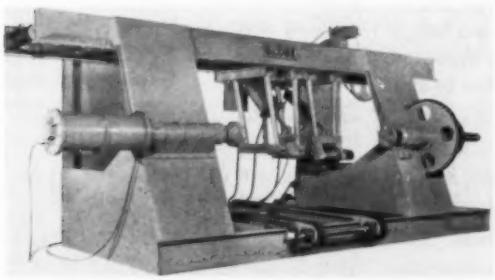
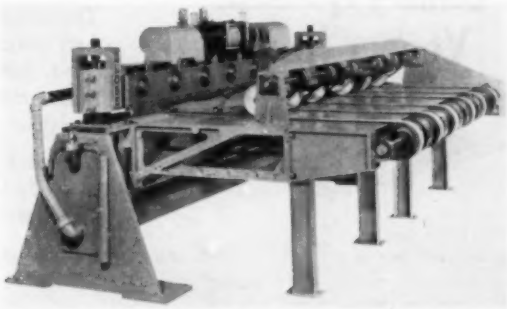


The Globe portable X-Lift, with low pressure pumping unit mounted in structural base.

The Globe 200 PSI plate type cold press. Available in sizes according to customer specifications.



The Globe overhead log barker. Available with either Rosser or scraper heads or combination.



The Globe-Diamond semi-automatic veneer clipper. Available in all sizes.

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Plywood

Truly A Golden Year!

(Continued from page 136)

cal people headed by Nelson Perkins are attempting to work out the specifications for several promising new products. One is a thick panel for use as combined subfloor and underlayment over widely spaced floor supports. This construction approach, originally developed by Kenneth Larsen, a Seattle builder, has captured national attention. The manufacturers have reached tentative agreement on the requirements for a standard thick panel of this kind which will probably be promoted under the tradename "2-4-1".

ALSO UNDER INTENSE study by both laboratory technicians and by the field force is a program for development of a workhorse farm panel intended as a low cost building material for farm structures. This would consist of a combination of lower grade veneer with exterior glue. Such panels are now being proved on actual farms throughout the country under a test program set up by the association's field promotion department.

The foundation for the association's entire promotion effort is quality supervision with accompanying grademarks indicating plywood that meets minimum standards. Last year, through the cooperation of the manufacturers, the commercial standard for fir plywood was strengthened in line with new requirements in the market and in the industry. Meanwhile, quality continues to pose a problem. Due to difficulties involved in identifying plywood on the job and poor performance of ungrademarked interior panels in many construction projects, FHA is considering eliminating the use of ALL interior from its minimum property requirements.

The association's technical staff is mustering all available data to prove the value of interior grades when used as recommended, but poor plywood continues to threaten acceptance of plywood generally in official circles as well as in the market place. In view of this, the association is doing everything possible to assure quality of product. The glue-line requirements for Plyscord are being strengthened now to meet the problem raised by FHA. Fortunately, the plywood industry of the West Coast with its history of joint effort in quality supervision continues to hold general acceptance of its products, without which further growth is impossible.

Production of Hardwood Plywood in the U. S., 1953

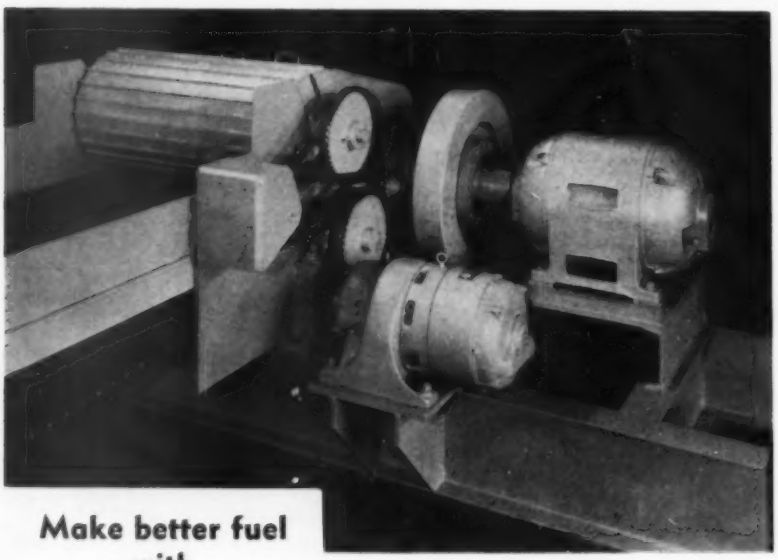
Geographic Region and Species of Face Ply	Millions of Square Feet: Total, Veneer Core	Total, Lumber Core
GEOGRAPHIC REGION		
Total, all regions	**322,716**	**113,823**
New England and Middle Atlantic	(s)	5,693
Lake	48,656	8,024
Central and Prairie	54,994	12,695
Southern	194,478	86,237
Pacific and Rocky Mountain	(s)	1,174
SPECIES OF FACE PLY		
Total, all species	**322,716**	**113,823**
Birch (domestic and imported)	69,216	2,977
Gum, sweet (red) and black (tupelo)	107,801	6,402
Maple (domestic and imported)	18,870	3,439
Oak	24,289	26,810
Walnut (domestic and imported)	8,017	14,287
Domestic woods not listed	54,175	9,709
Mahogany (Khaya and Swietenia)	37,022	44,890
Philippine woods	1,352	964
Imported woods not listed	1,974	4,345

(s) Withheld to avoid disclosure of indiv. mills' production.

Source: Bureau of Census.

• When will the U. S. softwood plywood industry begin using all exterior adhesives in their panels? One plywood executive told THE LUMBERMAN that he believes a trend is developing toward that goal and that eventually all domestic mills will have exterior glue lines regardless of panel grade.

• What of plywood specialties? The field is growing rapidly. Extensive national advertising by leading manufacturers has made the general public conscious of the existence of these specialties. Getting them to buy and specify certain company brand and trade marks is a job in which architects and designers are assisting.



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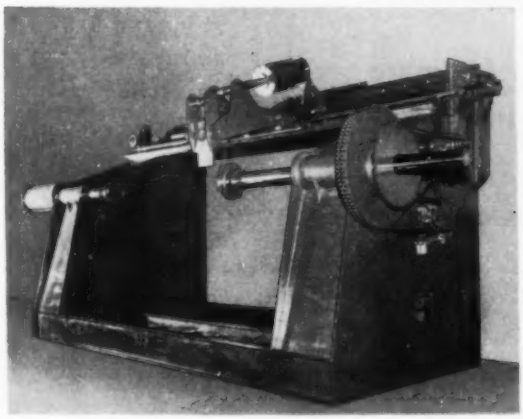

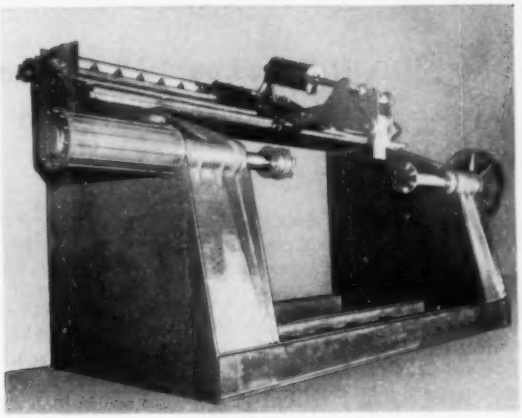

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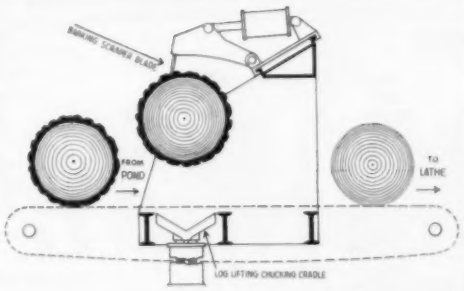

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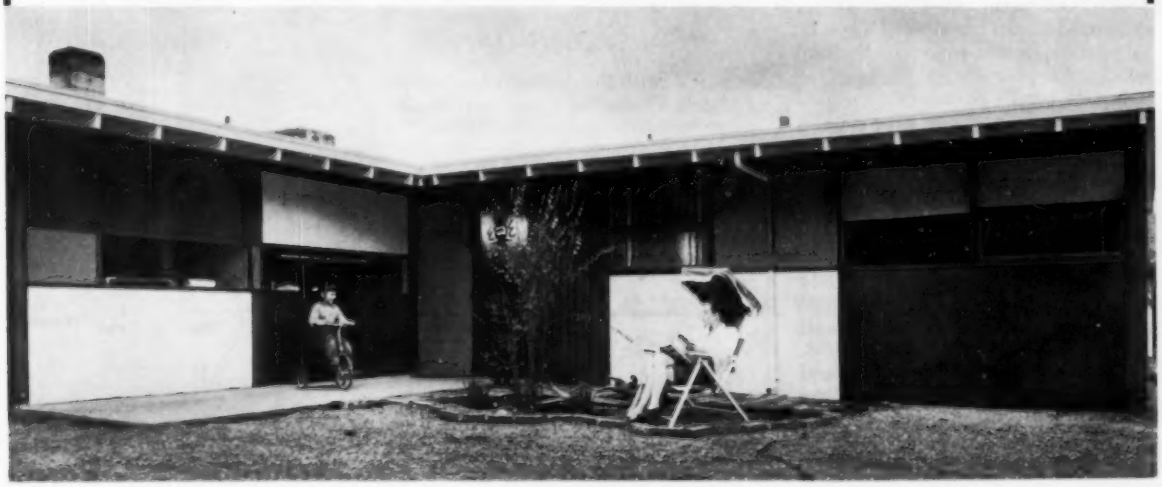
The Islander—Designed by Paul Hayden Kirk, AIA, Seattle, Wn.; manufactured by West Coast Mills, Chehalis, Wn.; erected by J. Richard Kieburtz, Mercer Island, Wn.



Plywood

Japanese Imports Up 40%

U.S. takes 125 million sq. ft. more in 1955 than it did during 1954

Reported by KENJI SAKAI, THE LUMBERMAN'S Correspondent in Tokyo, Japan

TOTAL PRODUCTION of Japanese plywood for the year 1955 reached 1.8 billion sq. ft. American demand still persisted as did also buying from other countries; total exports were 611 million sq. ft. U.S. took 436 million sq. ft. or 71.5%. (Note accompanying tables.)

Export, By Species, 1955

	MM sq. ft.	%		MM sq. ft.	%
Lauan	523	85.7	Beech	8	1.3
Sen	46	7.6	Oak	2	0.3
Birch	17	2.8	Other	5	0.8
Linden	9	1.5	TOTAL	610	100

Export, By Type, 1955

Type I (waterproof)	3 MM sq. ft.		0.5%
Type II (water resistant)	390	"	63.9
Type III (moisture resistant)	203	"	33.3
Type IV (non-water-proof)	14	"	2.3
Total	610	"	100%

(Source: Japan Plywood Inspection Corp.)

As a whole, what characterized the Japanese plywood industry in 1955 was the effort for stabilization of the export trade and increased consumption domestically. In May, the Japan Plywood Exporters' Assoc., through approval by the Ministry of International Trade and Industry, stopped taking orders for lower quality plywood. This move applied to door skins destined for the U.S. and Canada. Next was the establishment of minimum prices for certain grades. $4.25 FOB Japan per 100 sq. ft. for door-sized Lauan plywood of Type II, 1st quality, is the representative top item of this price list.

In October the Association decided to set forth a limitation of quantities to be shipped to North and South American countries and to England and Eire. The total quota was allocated among member exporters according to their past record and current business capability.

THERE WERE IN JAPAN in all 316 plywood factories in 1947—a record at the time. The total number of plants decreased to less than 180 by 1953, due to failures by inexperienced and weak management. Meantime, as the importation of Lauan logs as raw material had sprung up, the productivity center moved to coastal cities. There were about 200 factories in 1954 and practically the same for 1955. There is little likelihood of any marked increase for the foreseeable future.

By the end of 1955, most of the existing manufacturers improved equipment sufficiently to put the Japanese plywood industry on a comparable technical level with the rest of the world. A few of Japanese firms can produce over 10 million sq. ft. per month, as follows:

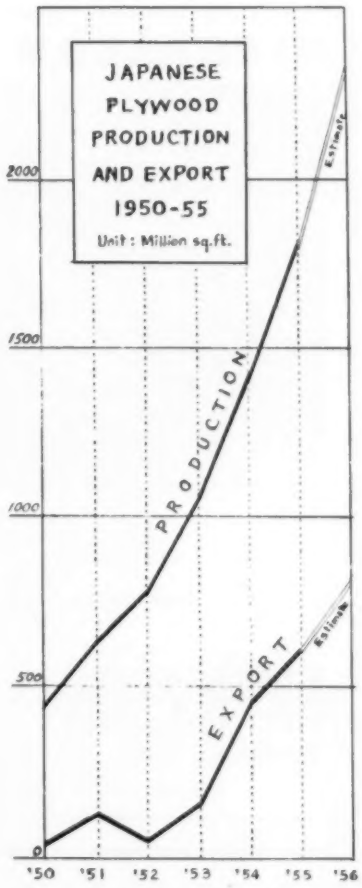
Toyo Plywood K.K., Nagoya
Nakamura Gohan Seisaku-sho, Nagoya
Eidai Sangyo K.K., Osaka
Dantani Sangyo K.K., Kokura
Noda Gohan K.K., Iawbuchi (Shizuoka Prefecture)

During 1955, there was one new factory, that of Toyo Plywood at Kakakura. A pulp mill and hardboard plant are being built at Nagoya. These plants will help utilize leftovers from plywood and lumber manufacture.

Since mid-1955, the industry has been confronted with the supreme question, which is: How to match the overall production of Japanese plywood with the foreign and domestic demand. There is a capacity of 2.5 billion feet per year. The industry decided to limit production, as follows:

	Total prod.	Domestic Use	Export
Lauan plywood	1,946	1,228	718
Non-Lauan plywood	377	240	137
TOTAL	2,323	1,468	855

In line with this limitation, a Japan Plywood Production Control Assoc. is being formed to enforce the quotas.



Japanese Plywood Exports By Destination, 1955

Unit: Million sq. ft.

Destination	Lauan Ply-Wood	Non-Lauan Ply-Wood	Total	%
United States....	364	72	436	71.5%
England	99	11	110	18.2%
Canada	17	0	17	2.8%
Okinawa	10	0	10	1.5%
Belgium	7	0	7	1.1%
Cuba	6	0	6	1.0%
Australia	3	0	3	0.5%
Puerto Rico.....	2	0	2	0.3%
Eire	2	0	2	0.3%
South Africa....	1	0	1	0.2%
Iraq	0	1	1	0.2%
Other Countries..	12	3	15	2.4%
Total	**523**	**87**	**610**	**100%**

Source: Japan Plywood Inspection Corp.

Japanese Plywood Production And Export, 1950-1955

Unit: Million Sq. Ft.

Year	Production	Domestic Consumption	EXPORT					% Exported
			U. S.	Eng.	Canada	Other	Total	
1950	442	402	—	—	—	—	40*	9.0
1951	625	499	13	28	0	85	126	20.2
1952	789	737	21	4	0	27	52	6.6
1953	1,064	908	112	16	2	26	156	14.7
1954	1,404	954	311	94	9	36	450	32.1
1955	1,800	1,190	436	110	17	47	610	33.9

*Breakdown by countries not available.
Source: Japan Plywood Inspection Corporation.

Swedish Plywood Makers Look to Housing Market

• Nils F. Nilsson of the Swedish Plywood Mfrs. Assoc. reports from Stockholm that Sweden is following in the footsteps of the U.S. and Canada in making extensive use of structural plywood for the home building industry. More developments are underway.

Production and prices of Swedish plywood during 1955 remained fairly stable and there are no startling changes to report. The Swedish plywood industry is quite closely tied in with the general trade conditions, and as long as these remain favorable, plywood is in good shape.

• The United States plywood industry is showing interest in the Philippines. There will be at least five new plants installed this year, and more are planned for 1957. The plywood outlook for the future in the Philippines looks bright.

New Plant for Production of Paper-Covered Veneer

LANE LAMINATORS recently built this modern new plant at Eugene, Oregon, for the production of paper-covered veneer laminates. Three different grades are turned out. This new product is expected to find many different uses in American industry. This plant was constructed by the Armco Drainage and Metal Products, Inc., of Portland. Carl R. Nystrom, one of the owners, states the product will be marketed under trade-name "Pa-Veneer."

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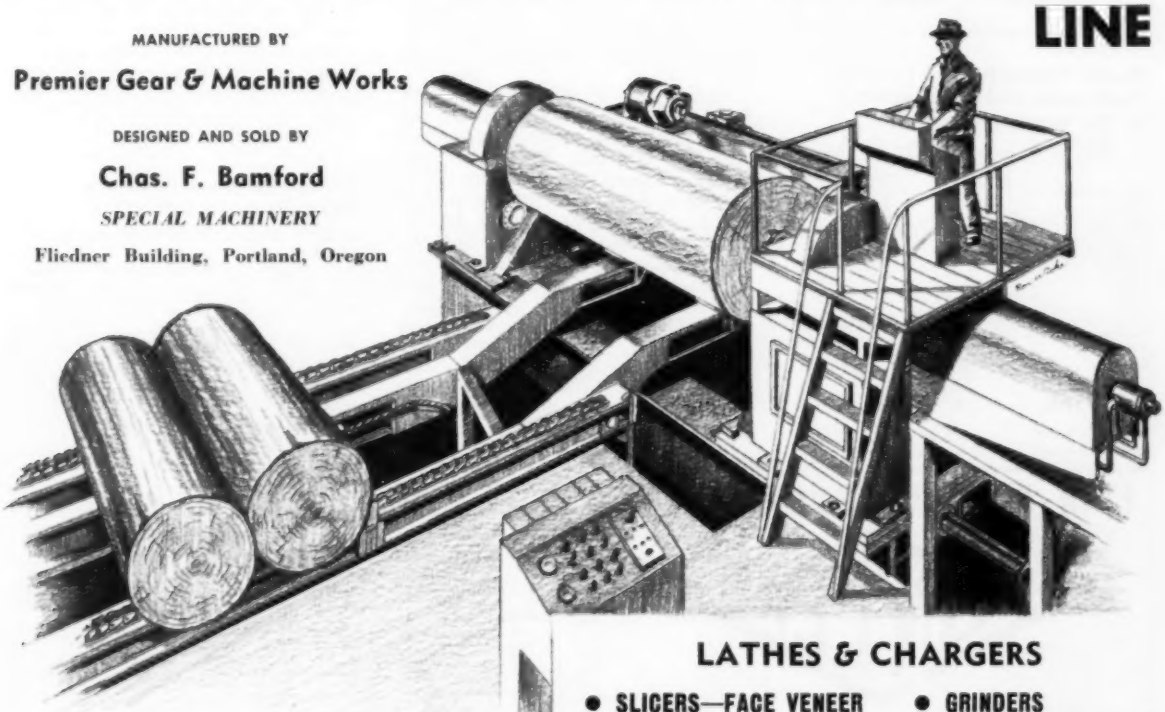

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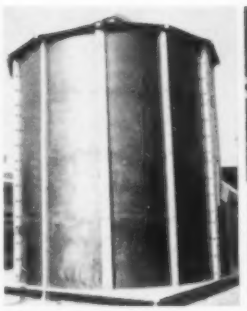


NEW HOT PRESS (R.) is symbol of French plywood industry modernization in recent years. Agricultural and industrial uses represent a huge market (see silo, left), which is practically untapped.

A Report on the French Plywood Industry

• The French plywood industry groups over forty manufacturers employing about 6,000 workers. Mills, distributed all over the country, are found principally in the Paris district and in the ports. Seventy percent of production is obtained from okoume, timber imported from Gaboon (French Equatorial Africa).

By dint of great efforts, production increased rapidly following World War II, as is shown by the following figures:

	Sq. Ft.
1946	95,809,000
1947	135,639,000
1948	189,464,000
1949	247,595,000
1950	269,125,000
1951	333,715,000
1952	312,185,000
1953	335,868,000
1954	387,540,000

As regards manufacture, many improvements have been made since the war.

Lathes and drying machines have been perfected. Gluing, pressing and finish have been generally improved and this facilitates the regular production of good quality boards. With respect to finish, the scraping method which ensures a remarkable surface finish of the boards, particularly in the case of okoume, is worthy of note. The manufacture of block board and laminated board is also making progress. The gluing methods are in full evolution.

THE NECESSITY OF EXTENDING the use of plywood, in particular for outside work, contributes to developing the manufacture of plywood glued with synthetic resins. Urea resin glues are currently utilized. Phenolic resin glues, the use of which was originally limited to the manufacture of special boards (shipbuilding, aircraft construction) are beginning to gain favor in private industries.

Since 1950 the following quantities have been exported from metropolitan France:

	Sq. Ft.
1950	58,131,000
1951	83,967,000
1952	49,519,000
1953	58,131,000
1954	77,508,000

Great Britain clearly takes the lead with a percentage which varies according to the year, from 25 to 50% of the total exports. South America and the Near East comes next and the French Union countries use very large quantities. Many other countries import French plywood. There is regularity of orders for okoume boards from the U. S.

World Production of Plywood (Softwood and Hardwoods) By the Leading Countries

(Figures given in 1000 cubic meters. 1 cu. m. = 1130 sq. ft. 3/8" basis.)

	1954	1953	1952
United States	4,700	4,590	4,000
USSR	1,000	946	883
Germany, Western	630	484	419
Canada	530	460	351
Japan	537	408	298
Finland	346	270	233
France	180	147	144
Italy	150	140	140
Brazil	70	80	63
Australia	81	67	50
Sweden	58	45	50
Malaya	n.a.	36	5
Spain	40	35	30
U. K.	51	34	29
Portugal	31	31	30
World Total	8,870	8,120	7,010

Source: UN-FAO

Finnish Plywood Industry Depends Upon Exports

• Only about one-seventh of the total plywood production in Finland is being consumed domestically. Following latest available figures tell the story: (all figures in cubic meters)

Plywood	First half—1955	All year—1954
Production total	181,000	346,100
Export total	166,821	297,916
Great Britain	101,647	166,653
USA	19,122	30,656
Netherlands	7,451	16,965
Denmark	5,240	13,147
Eire	4,557	5,382
Others	28,804	65,113

LINN PLYWOOD CORPORATION

LIN-PLY

Manufacturers of

DOUGLAS FIR PLYWOOD

INTERIOR GRADES

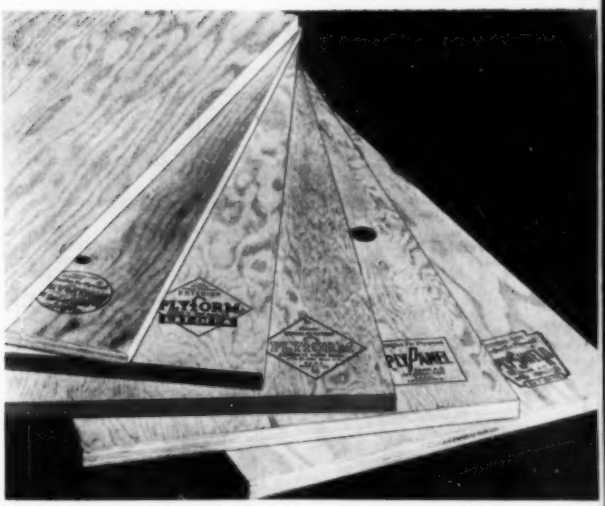
Albany, Oregon Phone: WA 6-1513

Production of Douglas Fir Plywood Interior and Exterior Grades

	Production 1954 % of Total	Production 1954 Footage (3/8" Basis)	Estimated Production 1955 % of Total	Estimated Production 1955 Footage (3/8" Basis)
Interior				
AA	4.02	156,932,000	3.71	181,790,000
AB	4.33	169,034,000	4.36	213,640,000
AD	30.95	1,208,220,000	29.83	1,461,670,000
BB	1.12	43,722,000	1.16	56,840,000
BD	1.24	48,407,000	1.43	70,070,000
CD	25.81	1,007,566,000	24.26	1,188,740,000
Exterior				
AA	1.71	66,755,000	1.68	82,320,000
AB	1.68	65,584,000	1.77	86,730,000
AC	12.18	475,480,000	13.66	669,340,000
BB	5.58	217,831,000	5.30	259,700,000
BC	.33	12,882,000	.41	20,090,000
CC	1.35	52,701,000	1.34	65,660,000
Other	9.70	378,667,000	11.09	543,410,000
Total Industry	100.00	3,903,781,000	100.00	4,900,000,000

Source: Douglas Fir Plywood Association

Directory of United States and British Columbia Plywood and Veneer Plants



Alaska

Juneau
Alaska Plywood Corp., plywood.
Wrangell
Pacific Northern Timber Co., sheathing plywood (proposed).

California

Anderson
Kalpine Plywood Co., plywood.
Shasta Plywood Division, U. S. Plywood Corp., plywood, also veneer plant.

Arcata
Arcata Plywood Corp., plywood.
California Barrel Co., Inc., veneer.
Durable Plywood Co., plywood.
Roddiscraft, Inc., Humboldt Plywood Div., plywood.
Simpson Redwood Co., veneer.

Burney
Lorenz Lumber Co., plywood (under construction).

Calpella
Durable Plywood Co., plywood.

Cloverdale
Sonoma Plywood Co., veneer.

Crescent City
Cal-Ore Veneer Inc., veneer.
Crescent Plywood Co., plywood.
Lund Plywood & Mfg. Co., plywood.
Medford Veneer & Plywood Corp., veneer.
Northern California Plywood, Inc., plywood.
Pacific Veneer, Inc., veneer.
Standard Veneer & Timber Co., plywood.
Timberline, Inc., veneer.
Timberline Veneer, Inc., sliced veneer.

Eureka
M&M Wood Working Co., plywood.
Mutual Plywood Corp., plywood.

Florin
Pine Veneer Cover Co., veneer.

Fort Bragg
Union Lumber Co., veneer.

Fortuna
Fortuna Veneer Co., plywood.

Georgetown
El Dorado Veneer Products Co., veneer.

Happy Camp
Willamette Builders Supply Co., fir & pine veneer.
Yreka Veneer Co., veneer

Honeydew
Vanworth Lumber & Veneer Co., veneer.

Klamath
Simpson Logging Co., veneer.

Leggett
(Mendocino Co.)—The Pacific Coast Co., veneer.

Los Angeles
Western Pacific Plywood Corp., plywood.

Oakland
Albrite Mfg. Co, plywood.

Orleans
Orleans Veneer & Lumber Co., veneer.

Red Bluff
Interstate Container Corp., plywood.

Redrest
Siskiyou Plywood Co., plywood.

Redding
Gold Nugget Plywood, veneer.
Redding Veneer & Box Co., Inc., veneer.

Salyer
PAT Veneer Co., veneer.

San Andreas
Calaveras Forest Products Corp., plywood.

Santa Clara
Tri-State Plywood Co., plywood.

Sonoma
Pacific Coast Co., plywood.
Sonoma Plywood Co., plywood.

South Fork
Siskiyou Plywood Co., plywood.

Southgate
General Veneer Mfg. Co., plywood.

Torrance
Plywood Manufacturers of California, Inc., pine & hardwood plywood.

Toulumne
Veneer Shook Mill, veneer.

Weed
Long-Bell Lumber Co., pine & plywood.

Willits
Industrial Plywood Corp., plywood.

Willow Creek
Rochlin Veneer & Plywood Co., veneer.

Idaho

Lewiston
Potlatch Forests, Inc., plywood (pine).

Post Falls
Idaho Veneer Co., sliced specialty face veneer.

Weiser
Produce Containers, Inc., veneer.

Montana

Polson
Polson Plywood Co., plywood (fir, pine, spuce, larch).

Missoula
Intermountain Plywood & Veneer Co., plywood (construction planned for mid-1956).

Oregon

Albany
Albany Veneer, Inc., core stock.
Edwards Bros. Const., Co., veneer.
Hub City Plywood Corp., plywood.
Linn Plywood Corp., plywood.
M&M Wood Working Co., plywood.

Astoria
Astoria Plywood Co., plywood.
Uptegrove Lumber Co., plywood.

Aumsville
Willamette Builders Supply Co., plywood.

Bandon
Bandon Veneer & Plywood Assoc., plywood.

Brookings
Brookings Plywood Corp., plywood.
Oregon Coast Veneer, veneer.

Coos Bay
Coos Head Timber Co., veneer (plywood facilities under construction).
Evans Products Co., plywood.
Spruce Veneer Products Co., veneer.

Coquille
Coos Bay Lumber Co., plywood.
Coquille Plywood, Division of Textron American, Inc., plywood.

Corvallis
Corvallis Plywood Corp., plywood.
Mary's Peak Veneer, Inc., veneer.
Plywood Products Corp., (Camp Adair), plywood.

Cottage Grove
W. A. Woodard Lumber Co., plywood.
Under construction.

Creswell
CPI Veneers, green veneer.

Culp Creek
Bohemia Lumber Co., Inc., veneer.

Curtin
Forrest Veneer Co., veneer.

Dallas
Willamette Valley Lumber Co., plywood (sheathing).

Deadwood
Coquille Valley Lumber Co., veneer.

Dillard
Pacific Plywood Co., plywood.
Perkins Veneer Co., veneer.
Roseburg Lumber Co., plants Nos. 1 and 2, plywood.

Dixonville
Douglas Veneer, Inc., veneer.

Drain
Drain Plywood Co., plywood (under construction).

Elkton
Snellstrom Lumber Co., veneer.

Eugene
Camac Veneer Co., veneer.
Campbell & McLean, Inc., plywood.
Giustina Veneer Co., veneer.
Lane Plywood Co., plywood.
Lane Veneer Co., veneer.
Multi-use Panel Corp., plywood.
Snellstrom Lumber Co., plywood.
United States Plywood Corp., plywood.
Zellner Co., veneer.
Zip-O-Log Veneer, Inc., veneer.

Gardiner
Long-Bell Lumber Co., plywood.

Garibaldi
Oregon-Washington Plywood Co., plywood.

Glendale
Multnomah Plywood Corp., veneer.

Gold Beach
Campbell & McLean, Inc., veneer.
Evans Products Co., veneer.
United States Plywood Corp., veneer (under construction).

Grants Pass
Custom Plywood, Inc., plywood.
Grants Pass Plywood, Inc., plywood.
Southern Oregon Plywood, Inc., plywood.
Valley Veneer, Inc., veneer.

Box Score—Number of Western Plants in 1956

(Totals include plants under construction and ones for which definite construction plans are underway.—Ed.)

	Plywood	Veneer
Alaska	2	—
California	26	23
Idaho	1	2
Montana	2	—
Oregon	60	49
Washington	41	16
Total, Western U.S. & Alaska	132	90
Alberta	1	—
British Columbia	13	6
Total, Western Canada	14	6
GRAND TOTAL	146	96

Plywood

Gresham
Olympic Mfg. Co., Division of The Dean Co., veneer.
Harbor
Oregon-Washington Plywood Corp., veneer.
Herton
Hult Lumber Co., veneer (under construction).
Idanha
M&M Wood Working Co., veneer.
Independence
National Plywood Cooperative, plywood.
Junction City
Valley Plywood Co., plywood.
Klamath Falls
Southern Pacific Plywood (Div. of Plywood, Inc.) fir & pine plywood.
Lebanon
Cascades Plywood Corp., plywood.
Western Veneer & Plywood Co., plywood.
Lyons
M&M Wood Working Co., plywood.
Madras
Jefferson Plywood Co., plywood (under construction).
Mapleton
United States Plywood Corp., plywood.
McMinnville
Yamhill Plywood Co., plywood.
Medford
Kogap Lumber Industries, veneer (under construction).
Timber Products Co., plywood.
Merlin
Bate Lumber Co., plywood.
Rogue Veneer Co., veneer.
Milwaukie
Milwaukie Box & Veneer Co., veneer.
Milwaukie Plywood & Door, Inc., plywood.
Myrtle Creek
Umpqua Plywood Corp., veneer.
North Bend
Menasha Plywood Corp., plywood.
Norway
Myrtle Point Veneer Co., veneer.
Oakland
The Martin Bros. Box Co., plywood.
Odell
Hood River Box & Veneer Co., veneer.
Philomath
Benton Timber Products Corp., veneer.
Portland
Coast Veneer Co., veneer.
Dwyer Lumber Co., veneer (plant under construction; expand to plywood later).
B. P. John Furniture Corp., plywood.
Linnton Plywood Association, plywood.
M&M Wood Working Co., plywood.
Multnomah Plywood Corp., plywood.
Nicolai Door Mfg. Co., veneer.
Port Orford
Port Orford Plywood Corp., veneer.
Western States Plywood Corp., plywood.
Riddle
Harbor Plywood Corp. of Ore., veneer.
Roseburg
Evans Products Co., plywood.
Umpqua Plywood Corp., plywood.
St. Helens
Crown Zellerbach Corp., veneer (to expand to plywood later).
Springfield
Natron Kilns, Inc., Sheathing (under construction).
Springfield Plywood Corp., plywood.
Vancouver Plywood Co., veneer.
Weyerhaeuser Timber Co., plywood, "Ply-Veneer".
Sutherlin
Nordic Plywood, Inc., plywood.
Sweet Home
G. H. Veneer Co., Inc., veneer.
Oregon Plywood Corp., plywood.
Tillamook
Aberdeen Plywood Corp., veneer.
Diamond Lumber Co., plywood.
Tillamook Veneer Co., veneer.
Tiller
Lake Pleasant Plywood Co., veneer.
Toledo
C. D. Johnson Lumber Co., subsidiary of Georgia—Pacific Plywood Co., sheathing.
Valsetz
Valsetz Lumber Co., veneer.
Vaughn
The Long-Bell Lumber Co., plywood.
Westfir
Edward Hines Lumber Co., plywood.
White City (near Medford)
Empire Plywood Co., plywood.
Medford Veneer & Plywood Corp., plywood.
Oregon Veneer Co., veneer.
Willamina
Willamina Lumber Co., veneer.

Washington

Aberdeen
Aberdeen Plywood Corp., plywood.
Harbor Plywood Corp., plywood.
West Coast Plywood Co., plywood.
Anacortes
Anacortes Veneer, Inc., plywood.
Arlington
Pilchuck Plywood Corp., sheathing.
Beaver
National Plywood Co. of Washington, hemlock & spruce plywood.
Bellingham
Georgia-Pacific Plywood Co., plywood.
Mt. Baker Plywood Inc., plywood.
Pacific Veneer & Plywood Corp., plywood.
Bingen
S.D.S. Lumber Co., plywood (under construction).
Centralia
Centralia Plywood, Inc., plywood.
Concrete
Skagit Veneer & Lumber Corp., veneer.
Darrington
Three Rivers Plywood & Timber Co., plywood
Elma
Elma Plywood Corp., sheathing.
Gordon-Ladley Plywood Products Co., veneer.
Enumclaw
Cascade Machine Works, veneer.
Everett
Everett Plywood & Door Corp., plywood.
Washington Plywood Co., plywood (plant at Lowell).
Hoquiam
Grays Harbor Veneer Corp., veneer.
Hoquiam Plywood Co., Inc., plywood.
Kalama
Columbia Veneer Co., plywood.
Kenmore (near Seattle)
Farwest Plywood Co., veneer.
Kosmos
U. S. Plywood Corp., veneer.
Lacey
Lacey Plywood Co., Inc., plywood.
Longview
Long-Bell Lumber Co., plywood.
Weyerhaeuser Timber Co., plywood.
McCleary
Simpson Logging Co., plywood.
Olympia
CPI Veneers, sliced veneer.
Georgia-Pacific Plywood Co., plywood.
Gordon-Ladley Plywood Products Co., plywood.
Hardel Mutual Plywood Corp., plywood.
Hy-Grade Hardwood Veneer, Inc., specialty veneer.
St. Paul & Tacoma Lumber Co., plywood.
Port Angeles
Peninsula Plywood Corp., plywood.
Port Gamble
Pope & Talbot, Inc., veneer (to expand to plywood later).
Puyallup
Brew Manufacturing Co., veneer.
Hendricks Veneer Co., veneer.
Spruce Veneer Package Corp., veneer.
Randle
Cowlitz Veneer Co., veneer.
Lacey Veneer, Inc., veneer
Raymond
Harbor Veneer Plant of Pacific States Box & Basket Co., veneer.
Renton
Seattle Plywood Corp., veneer.
Ridgefield
Ridgefield Veneer Corp., plywood (under construction).
Seattle
Elliott Bay Mill Co., plywood.
U. S. Plywood Corp., plywood.
Shelton
Simpson Logging Co., plywood.
Stevenson
Hegewald Timber Co., veneer.
Stevenson Co. Ply, Inc., plywood.
Sumner
Willard V. Young Co., plywood.
Tacoma
Buffelen Woodworking Co., plywood.
Lacey Veneer Co., Inc, plywood.
Donald W. Lyle, Inc., plywood.
North Pacific Plywood, Inc., plywood.
Northwest Door Co., plywood.
Puget Sound Plywood, Inc., plywood.
Rainier Plywood Co., plywood.
Resinweld Plywood, Inc., plywood.
Vancouver
Fort Vancouver Plywood Co., plywood.

Alberta

Edmonton
Western Plywood, Ltd., aspen & poplar plywood (under construction).

British Columbia

Creston
Creston Sawmills, Ltd., veneer.
Fraser Mills
Canadian Western Lumber Co., plywood.
Kelowna
S. M. Simpson, Ltd., veneer.
New Westminster
Mount Baker Plywood Co., veneer.
Pacific Veneer Div., Can. Forest Prod., Ltd., plywood.
North Vancouver
M. B. King Lumber Co., Div. of Fullerton Lumber Co., veneer.
Port Alberni
MacMillan & Bloedel, Ltd., Alberni Div., plywood.
Quesnel
Western Plywood (Cariboo) Ltd., plywood.
Savona (near Kamloops)
Savona Timber Co., plywood.
Vancouver
Beaty Laminated, hardwood, plywood.
Evans Products, Ltd., plywood.
MacMillan & Bloedel, Ltd., Vancouver Div., plywood.
MacMillan & Bloedel, Ltd., sheathing plywood (under construction.)
J. R. Murray, Ltd., plywood.
Western Plywood Co., Ltd., plywood.

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Veneer Machines Division
JACKSON INDUSTRIES INCORPORATED
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Vernon
Wood Products Co-operative Ass'n, veneer.
Victoria
B. C. Forest Products, Ltd., Victoria Plywood Div., plywood.
Sooke Lake Lumber, Ltd., plywood.
Youbou
B. C. Forest Products, Ltd., Cowichan Div., veneer.

Hardwood Plywood

(THE FOLLOWING MEMBERS of the Hardwood Plywood Institute account for the majority of hardwood plywood production.)

Algoma Plywood & Veneer Co.
Algoma, Wis.
(Subsidiary of U. S. Plywood Corp., Home office: 55 W. 44th St., New York City.)
Atlas Plywood Corp.
(Plants: Newport, Vt.; Greenville, Me.; Goldsboro, N. C.; Gladstone, Mich.)
Bradley Plywood Corp.
Savannah, Ga.
Calypso Veneer Co., Inc.
Calypso, N. C.
Commonwealth Plywood Co., Ltd.
Ste. Therese, P. Q., Canada.
Darlington Veneer Co., Inc.
Darlington, S. C.
F. Eggers Plywood & Veneer Co.
Two Rivers, Wis.
Fernwood Industries
Fernwood, Miss.
Georgia-Pacific Plywood Co.
P. O. Box 1350, Savannah, Ga.
International Fibre Board and Plywood Sales, Ltd.
Gatineau, P. Q., Canada.
Jasper Wood Products Co., Inc.
Jasper Ind.
Larson Plywood Co.
Sheboygan, Wis.
Linwood, Inc.
Gillett, Wis.
McKnight Veneers, Inc.
P. O. Box 415, Helena, Ark.
Memphis Plywood Corp.
Memphis, Tenn.
Nickey Brothers, Inc.
2700 Summer Avenue, Memphis, Tenn.
Northwestern Veneer & Plywood Corp.
Gladstone, Mich.
(Subsidiary of Atlas Plywood Corp., Home Office: 20 Providence St., Boston, Mass.)
Perry County Plywood Corp.
Beaumont, Miss.
Picayune Veneer & Plywood Corp.
Picayune, Miss.
Allen Quimby Veneer Co.
Bingham, Me.
Roddis Plywood Corp
Marshfield, Wis.
Setter Brothers, Inc.
Cattaraugus, N. Y.
Southern Laminating Co.
1601 Clancy (Box 115), Memphis, Tenn.
Southern Plywoods, Inc.
P. O. Box 448, Greenville, Fla.
Splicedwood Corp.
Mellen, Wis.
Underwood Veneer Co., Div. of Connor Lumber & Land Co.
Wausau, Wis.
United States Plywood Corp.
P. O. Box 524, Orangeburg, S .C.
Valdosta Plywoods, Inc.
P. O. Box 136, Valdosta, Ga.
Weber Veneer & Plywood Co.
Shawano, Wis.
Winnsboro Plywood Co.
Winnsboro, S. C.

Georgia-Pacific's GPX Green

• A paint grade, plastic-surfaced plywood, GPX Green, has withstood a series of torture tests, which proved that it is impervious to deterioration from moisture, excessive sun and violent temperature changes and that it is suited to indoor and outdoor uses under every possible kind of condition.

GPX Green is exterior solid core Douglas fir plywood surfaced on both sides by a phenolic resin impregnated cellulose fiber sheet. This sheet is manufactured by a new process in which the cellulose fibers and phenol-formaldehyde resin are combined before the sheet is formed. The resin and fibers are bonded together by intermolecular forces rather than by dipping cellulose fiber sheets in a resin bath. In a subsequent operation, a phenolic glue line is applied to one side of the sheet.

These sheets are placed on Douglas fir veneers and the sandwich thus formed is put between aluminum plates. Heat and pressure are then applied and during this process the resin flows and sets, producing an integral plastic surfaced panel especially engineered for painting. It requires less paint; because the plastic surfacing will not check or crack, the paint lasts much longer.

• In B. C., where plywood production has increased steadily over the years, another new mill was announced by MacMillan & Bloedel. It's a sheathing plant, to go up on the north arm of the Fraser at the Vancouver plywoods division of the company. Three hundred new jobs in the mill will be created.

• M&M had a good year in '55, too. It had a phenomenal increase of 55% in earnings and of 17.7% in sales, for the first nine months of its fiscal year. Sales were just under $32 million, up almost $4 million from the similar period in '54. Profits after taxes were $2,634,387 as against $1,702,979.

• Plywood coop shares look like one of the best investments in America today. One northern California coop that was organized recently had its shares shoot from $5000 to $15,000 in value in a 12-months period. Individual shares in another coop, this one in Washington, have fared even better: $16,000 as against $4500 less than a year ago.

• The Long-Bell Lumber Co. is another one of a dozen or so softwood plywood plants manufacturing Texture One Eleven, developed by the Plywood Research Foundation and now a recognized industry-wide specialty promoted by the Douglas Fir Plywood Association. Known also by the abbreviated name T 1-11, this specialty is produced at the Gardiner, Ore., plywood plant of Long-Bell.

At another company plant in Weed, Calif., sliced knotty pine plywood panels are produced.

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Lumbermen's
Buying
Service

EXCEPT FOR CUSTOMARY SEASONAL fluctuations and the perennial mid-summer car shortage on the lines of the Southern Pacific Railroad, mills —large and small—in the Douglas fir region of Washington, Oregon, Northwestern California and British Columbia were able to bask in another year of national prosperity.

The multitude of Green Fir mills entering the World War II and postwar era of stupendous demand and undreamed-of lumber prices have been accorded a much longer life span than originally contemplated on the premise of being in and out "gravy train" operations.

Green Fir mills are still sprouting, maturing and dying like mushrooms and small timber tracts, public and private, including farmer woodlots, are being depleted or rapidly disappearing as the result of ever-increasing acquisition and consolidation of large operating timber ownerships. There will always be so-called small mill operations but the shrinkage of available timber, contract and open market logs will bring a high mortality rate to small mills (and some of the larger ones) from now on.

SO-CALLED COOPERATIVE sustained yield unit management of privately-owned and intermingled or adjacent Federally administered public timberlands is passe and presently-prevailing attempts to restrict timber harvesting and manufacturing to local marketing areas by government agency dictum will be superseded by allowable cut based on the reproductive capacity of a timber reservation as a whole.

For the Green mill fraternity still representing close to 50% of industry Green lumber production, sales realization throughout the year paralleled the high prices of the preceding four years as illustrated in the following tabulation which is indicative of mill sales returns including wholesale commissions on the last day of each calendar month covering the key item, 2x4 R/L #2&Btr.

	1955	1954	1953	1952	1951
January	$73	$61	$69	$77	$82
February	71	64	69	74	80
March	74	65	69	74	83
April	82	67	69	81	80
May	77	67	65	74	75
June	79	85	67	77	74
July	80	75	62	77	74
August	79	72	60	75	79
September	77	72	61	72	78
October	71	71	60	70	75
November	75	69	59	67	71
December	76	72	60	69	73

ALTHOUGH THE LARGE MIXED car Fir mills enjoyed a profitable and satisfactory business year, this segment of the industry was handicapped by a lack of Industrial Clears, Patterned Clears (Shed stock), Structural grades and #1 Common Dimension, a condition largely attributable to the decrease in quality of Douglas fir timber, more extensive re-logging and the ever-increasing drain on Clear and lower grade logs for use in the manufacture of plywood.

Throughout the year, the market for Western Pine and associated species was comparable to the West Coast Fir region although ponderosa and sugar pine are much less susceptible to market demand and price changes.

Except for a decrease in United Kingdom business, largely due to competition from Balkan states, total export business for 1955 as reported to the Pacific Lumber Inspection Bureau, Seattle, and shown in the following tabulation, was close to the preceding year. Domestic cargo business showed a slight increase over 1954.

	From British Columbia			From Oregon, Washington, Northern California		
	1954	1955	% Change	1954	1955	% Change
EXPORTS to						
Africa	145	189	30%	94	49	— 48%
Australia	115	137	20%	79	87	10%
United Kingdom	693	607	— 12½%	68	42	— 40%
Other	77	84	10%	246	230	— 7%
Total Foreign	1,030	1,017	— 1½%	487	408	— 16%
DOMESTIC to						
Atlantic Coast	508	345	— 32%	934	1,031	11%
California	2	1	— 50%	447	556	23%
Hawaii	5	13	160%	34	46	35%
Puerto Rico	29	34	20%	11	7	— 38%
Other	5	2	— 60%	4	5	25%
Total Domestic	549	395	— 28%	1,430	1,645	15%

Combined—B.C., Oregon, Washington, No. California

	1954	1955	
Total Foreign	1,517	1,425	down 6%
Total Domestic	1,980	2,040	up 3%
Total Waterborne	3,497	3,465	down 1%
Total to Atlantic Coast	1,442	1,376	down 4½%
Total to California	449	557	up 25%

Lumber Production in the State of California 1910-55

Year	Active Sawmills Reporting Number	M Bd. Ft.
1910	253	1,265,876
1915	136	1,119,458
1920	195	1,482,102
1925	173	2,042,991
1930	155	1,514,263
1935	189	1,355,713
1940	240	1,954,500
1941	330	2,331,893
1942	311	2,330,041
1943	365	2,352,592
1944	413	2,468,943
1945	457	2,260,792
1946	907	2,681,173
1947	884	3,408,522
1948	984	3,970,539*
1949	N.A.	3,811,642*
1950	N.A.	4,262,773*
1951	801	4,868,998*
1952	N.A.	4,843,100
1953	N.A.	5,122,000
1954	N.A.	5,200,000*
1955	N.A.	5,400,000*

*Estimate
Source: U. S. Forest Service, Bureau of Census.

Production of Lodgepole Pine Lumber in the United States

	M Bd. Ft.		M Bd. Ft.
1910	26,634	1944	72,301
1915	22,672	1945	65,358
1920	30,136	1946	86,220
1925	24,979	1947	99,600
1930	30,401	1948	95,496
1935	17,691	1949	98,275
1940	47,063	1950	103,052
1941	72,740	1951	139,476
1942	66,358	1952	149,365
1943	68,053	1953	141,828

Source: Bureau of Census & Forest Service; figures for 1950-53 reported as estimates by Western Pine Association.

- DOUGLAS FIR
- PACIFIC COAST HEMLOCK
- WESTERN RED CEDAR
- PHENOLIC BONDED PLYWOOD
- RED CEDAR SHINGLES

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FRAMING FOR AMERICA'S HOMES consumes billions of board feet of lumber.

Lumber Production Gains

Nation's housing boom continues, with more demands for hardwood flooring.

IT WAS A GOOD YEAR for the nation's lumber industry in 1955. Production was an estimated 38.5 billion board feet, five percent above output of 36.7 billion feet in 1954 and the highest figure since 1916.

Lumber consumption for 1955 is estimated at approximately 42.5 billion board feet—six per cent above consumption of 40 billion board feet in 1954 and the highest since 1929.

Both softwoods and hardwoods have shared in the gains recorded by the industry. In the first nine months of 1955, softwood shipments were one per cent above production, while new orders were two per cent above output. Hardwood shipments in the first nine months of 1955 exceeded output by nine per cent, while new orders were 13 per cent above production. A year earlier hardwood shipments and new orders both were 13 per cent below production.

This marked improvement in the hardwood situation reflects strength in the furniture market, a significant increase in hardwood lumber exports to the United Kingdom, a continued rise in hardwood flooring production, and related factors.

Production of hardwood flooring shows a gain of 15 per cent over 1954. Output totaled 958 million board feet in the first nine months of 1955, compared with less than 836 million board feet in the corresponding period last year.

IN RESPONSE TO THE INCREASING demands for hardwood flooring that can be laid directly on concrete surfaces, engineers at the U. S. Forest Products Laboratory have developed a flooring block that utilizes low-quality hardwood, needs no tongues and grooves, and is assembled from small pieces without glue or metal fasteners.

A floor of these 9-inch square blocks, ¾ inch thick, was recently put down in a Laboratory office with 4 types of mastic, 3 of which are relatively recent developments. Within a year, the engineers hope to be able to estimate how well this flooring will stay in place.

As more and more American homes are built directly on concrete slab foundations, the demand for hardwood block floors is expected to expand. A survey by the Forest Products Laboratory in 1950 showed that 20 percent of the homes built that year had slab foundations.

Prefabs accounted for about 100,000 homes or nearly 10 per cent of all new single-family housing starts in 1955.

The prefab housing industry will nearly double its consumption of lumber and wood products in 1955 as compared with 1954. Last year prefab housing consumed more than 400 million board feet of lumber, some 250 million feet of plywood, more than 78 million board feet of flooring, 847,000 doors, and some 52 million feet of wood trim.

TIMBER ENGINEERING COMPANY, research and engineering affiliate of National Lumber Manufacturers Association, is planning its program on:

- Improved processes and formulas for particle board and hardboard as a practical, profitable outlet for residuals and low grades.
- Development of a less expensive waterproof glue that sets at room temperature as a means of greater product diversification at all mills and utilization of low grades of all species; development of a glue and gluing process to give stronger and more economical end joints; and development of glues and processes for the bonding of wood for special market requirements where high-mosture content lumber or treated lumber is used.
- Further development and commercial application of a new lumber seasoning process, using solid, recoverable chemicals, to attain greater economy and speed in seasoning.
- Application of ultrasonics for "videosonic" inspection of lumber to assure better quality control and utilization of stress grades by exact grading; use of ultrasonics, atomic power and radioactivity for technics and products that a few years ago would have been regarded as fantastic.

INCREASED AUTOMATION AND INCREASED use of sawmill residues are needed in the lumber industry to hold the price in line with competing materials. Installation of more automatic equipment in sawmills is necessary to increase man-hour productivity.

Automatic dogging, riderless carriages, remote setworks for resaws and other similar equipment can replace men who have no important decisions to make.

Increased utilization of plant residues by expanding uses for slabs, edgings, trims, sawdust, shavings and bark is a must. Use of mill residues as chips or fuel avoids a disposal cost and may spell the difference between profit and loss for the entire operation.

By 1975, lumber prices are expected to increase about 80 percent more than the anticipated increase in competitive products. The anticipated increase of mill residue value probably will not be sufficient during the next 10 to 20 years to offset cost increases in lumber manufacture.

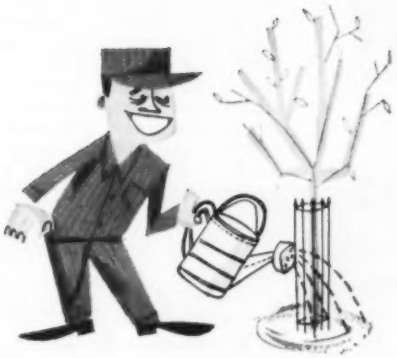
Increased lumber costs will come from such "pressures" as higher stumpage costs and increased logging costs because of smaller volumes per acre, rougher terrain and greater hauling

(Continued on page 160)

continued growth

and development in

PLYWOOD ... Long-Bell



Since the early days of the plywood industry, Long-Bell has pioneered in the expansion of customer service and facilities and in the development of plywood products.

And, with the opening soon of its new fir plywood plant at Vaughn, Oregon, there will be FOUR MODERN LONG-BELL PLANTS to serve you with *quality plywood*.

You can depend on Long-Bell for continued growth and development of plywood products—products that you can sell with confidence because you know that they are manufactured under Long-Bell's rigidly controlled processes.

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MILLWORK & FACTORY PRODUCTS: Douglas Fir and Ponderosa Pine Window and Door Frames, Window Units, Sash & Doors, Glazed Sash, Industrial Cut Stock, Ponderosa Pine Box Shook.

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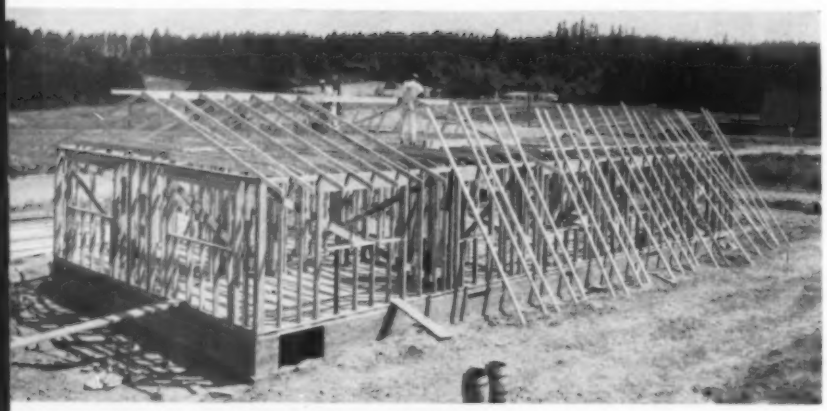
Lumber



THE NATION'S BOOMING housing market finds Douglas fir framing the homes of the nation's citizens. Durable and sturdy, it is popular because it is adapted to many structural uses.

Production Surmounts Problems

Douglas fir region, plagued by floods and curtailed logging, maintains output

LUMBERMEN ALONG THE PACIFIC Coast's Douglas fir region in western Oregon and Washington and northern California will not soon forget 1955. It was the year of the big flood, with literally 40 days and 40 nights of rain during November and December, and damage in southern Oregon and northern California so vast as to cause the two regions to be labeled disaster areas. Hurricane winds up to 85 miles an hour did incalculable damage along the Oregon coast, knocking down untold millions of board feet of green timber.

Logging roads throughout the two states were seriously damaged by heavy runoff, the Northwestern Pacific Railroad in northern California was out of business for two months with serious slides and many mills were flooded and down during the peak of the runoff.

Even before the floods, fir millmen had problems. They toughed out the longest and most severe freight car shortage in history, with even the northern lines tight on supply at times. For weeks Oregon mills were hard pressed to get half of their needed freight cars.

ONE BRIGHT SPOT: The industry had no labor troubles such as the crippling 84-day strike which closed a majority of the cargo and larger dry mills in 1954. There appear to be no labor troubles in 1956, for operators and labor have been negotiating contracts which promise continued production.

Business fell off in the last six months, especially in green dimension, as the administration tightened up on mortgage money to head off another inflationary spiral. Even with this curtailment of business volume, fir mills still had a good year. Production reached 9,609,333,000 board feet, according to the authoritative West Coast Lumbermen's Association preliminary figures. This was 9 percent more than in strike-hindered 1954, but 1.4 percent off from the average of the previous five years. Orders for the year were slightly behind at 9,353,754,000 and shipments totaled 9,448,021,000 feet. Stocks at mills were up somewhat at 1,067,627,000 board feet.

Offshore and export shipping was substantially down last year, but movements of lumber to east and west coast markets by ship showed gains. Rail and truck, up slightly, were predominant with 6,913,159,000 feet.

IN 1955 THE GRADING RULES took a major overhauling, with some 50-year-old grading rules dropped for more streamlined, modern methods. Major change in new West Coast Rule 15, effective March 15, 1956, is the elimination of number grades in common boards and dimension for more suitable and understandable and easier-to-merchandise name grades. No. 1 becomes Construction; No. 2 will be Standard; No. 3 is Utility; and No. 4 takes the name of Economy. The new rules are much more understandable and have been written for the buyer and not the professional grader.

Only in four years since 1929 have fir mills produced more lumber than in 1955. That was in the period from 1950-1953, which gives some idea of the tremendous resilience and power of this sprawling industry, which despite floods, freight car shortages and restricted credits on mortgage money still managed to carve out a creditable record.

The nation built more homes than in any other year in history, excepting only record smashing 1950, with 1,350,000 starts credited to 1955. It did a record light construction business, all of which helped fir mills.

Federal and business economists have been cautious about forecasts for 1956, with most willing to admit the first six months will be good. This sounds like a repeat of conservative optimism which veiled forecasts just a year ago. However, federal housing chiefs have upped their sights for 1956, and now claim the nation will start 1,300,000 new homes, based on administration announcements that mortgage money will be easier. School building should step up to highest levels in history if federal money is forthcoming to ease the burden on states. Heavy industry has announced elaborate plans for extensive plant expansion and remodeling during the year.

Some Highlights of 1955 In the Douglas Fir Region

• Lumber production in the Douglas fir region during 1955 again crowded the 10 billion board foot mark. Only six times in the last 30 years have fir mills exceeded 10 billion. Capsule table shows:

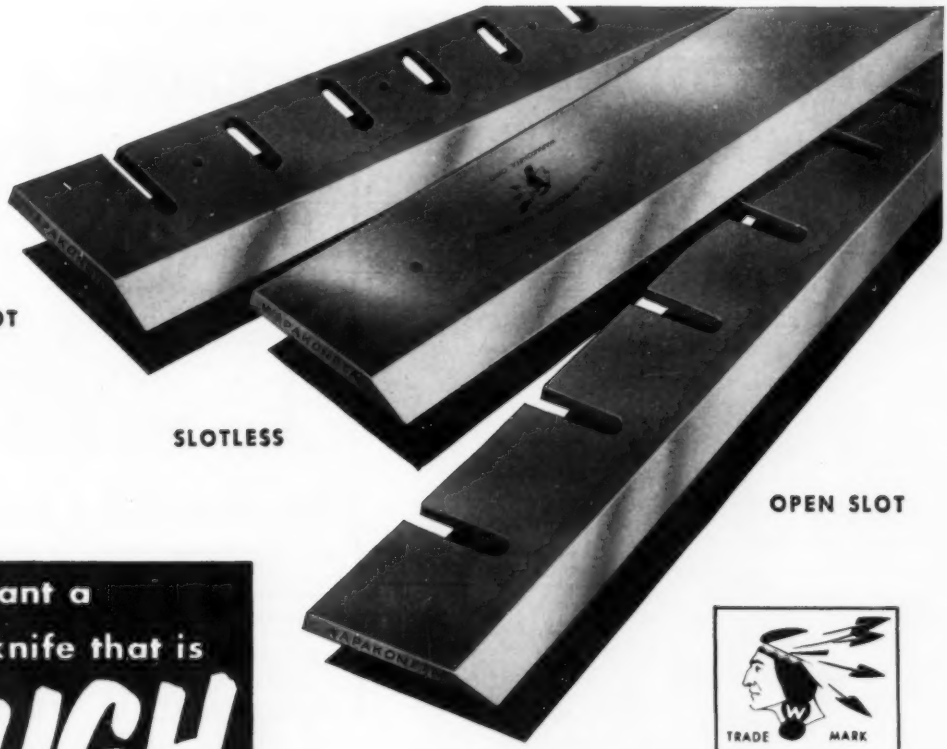
Douglas fir mills,

1955	9,609,333,000 bd. ft.
1954	8,851,757,000 bd. ft.
1953	9,744,627,000 bd. ft.
1952	10,154,000,000 bd. ft.

Production, Cost History and Number of Mills Operating in Douglas Fir Region, 1926-54

Year	Prod. Million Feet	Average Cost of Prod. Per M Feet	Cost Index (Per Cent)	No. of Active Mills
1926	10,285	$21.51	100.0	631
1927	9,902	21.16	98.4	580
1928	10,109	20.19	93.9	651
1929	10,290	21.15	98.3	883
1930	7,681	20.49	95.3	662
1931	5,400	16.02	74.5	535
1932	3,153	15.50	76.7	441
1933	4,348	16.20	75.3	606
1934	4,396	20.00	93.0	719
1935	5,113	19.28	89.6	670
1936	6,848	19.61	91.2	772
1937	7,067	21.72	101.0	818
1938	5,510	20.64	96.0	663
1939	6,945	19.52	90.7	699
1940	7,589	20.67	96.1	714
1941	9,176	24.87	111.3	906
1942	9,058	28.72	133.5	1,044
1943	8,669	31.88	148.2	1,012
1944	8,494	33.34	155.0	1,010
1945	6,586	35.35	164.3	986
1946	7,835	37.22	173.0	1,603
1947	8,962	47.50	220.8	1,888
1948	9,405	55.73	259.1	1,675
1949	9,135	52.70	245.0	1,242
1950	10,108	55.66	258.8	1,186
1951	10,416	63.28	294.2	1,367
1952	10,154	66.96	311.3	993
1953	9,744,627	65.12	....	900
1954	8,851,757	63.60	....	774
1955	9,609,333	....	....	....

Source: West Coast Lumbermen's Association; compiled from statistics compiled by W.C.L.A., Bureau of Census and State of Washington.



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A veneer knife must be custom-built to the exact specifications of the job. To hold an extremely keen edge under severe operating conditions, the proper analysis of electric-induction tool steel is welded under high pressure to a soft steel back and precisely tempered. Three important operations combine to produce Wapakoneta Veneer Knives: selection of top-grade tool steels for quality performance, heat treatment for correct hardness; high tensile strength and resistance to abrasion; proper and precision grinding for a true cutting edge.

Years of field testing and laboratory work have gone into the development of the fine steels and modern machining methods which mark a Wapakoneta Veneer knife. Engineered to the individual job, Wapakoneta Veneer Knives are available in open slot, closed slot and slotless types.

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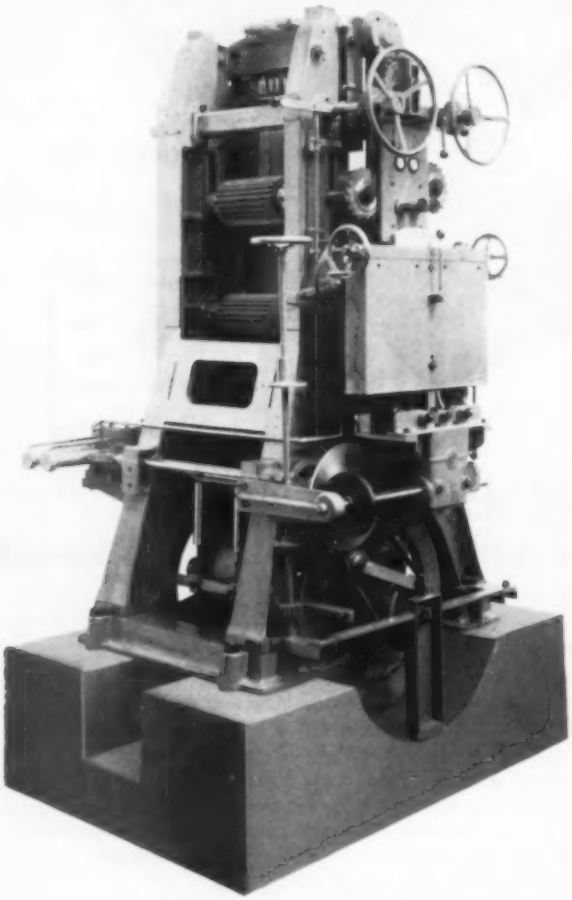

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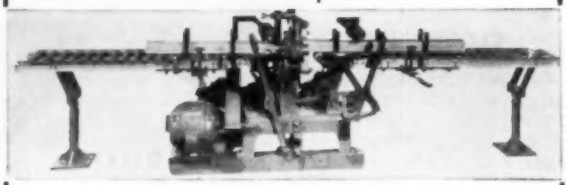

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Redwood Region Shows Important Gains in '55

New promotional material aids greater use of this species

PRODUCTION AND SHIPMENTS of redwood lumber, backed up by a planned program of promotion, and a conservation program for a continuing production in the future, showed substantial gains in the Redwood Region during 1955.

Year-end reports from the 20 companies reporting to the California Redwood Association showed the following increases over 1954 for redwood lumber:

Production	8%
Shipments	11%
Orders received	11%

Total redwood production for 1955 by the twenty companies was 611,791 M ft. Production of all species was 778,852 M ft. Estimated total production of redwood for the entire region for 1955 is 950 million bd. feet.

IN THE PROMOTIONAL FIELD, representatives of the California Redwood Association met with 750 architects, specifiers and builders in 17 meetings throughout the United States during 1955 and individual contacts were made with an additional 292. Intensive field work was done in four market areas of the South, Southwest and New England. Individual literature requests (for redwood data sheets and conservation publications) reached a new all-time high during 1955 with an increase of requests from specifiers of 184 percent over 1954.

The number of editorial pages featuring California redwood in shelter, architectural and women's service magazines totaled to an even 800—more than twice as much as in 1954. An attractive photographic exhibit of residential, commercial, church, school and civic structures in the San Francisco Bay Region, a joint venture of the California Redwood Association, the Northern California Chapter of the American Institute of Architects and the Smithsonian Institution, was on a tour of principal art galleries and architectural schools throughout the United States and Canada during 1955 and will continue through 1956.

A carefully planned program of promotion to feature "Garden Redwood from California" was in the production stages during the closing months of 1955—to be inaugurated in February of 1956. This will provide dealers with window streamers, counter cards, envelope stuffers, data sheets, advertising mats and a 16-page four-color booklet to assist them in selling the grades of redwood which are best suited to use in garden structures.

FLUSH RESAWN REDWOOD ceiling, stained light gray, extends interior living space by borrowing of outdoor space with tremendous overhangs. Walls, also of resawn redwood, are charcoal brown. Photo is courtesy of California Redwood Association.

IN THE TECHNICAL FIELD, studies are continuing on finish weathering, clear finish and redwood extractives toward retaining the natural beauty of redwood. Studies in the industrial field are continuing on the deterioration of wood in cooling towers. A study is under way for the development of shop grade markets.

In the field of forestry and conservation, highlights of Redwood Region Conservation Council activities have been:

- Forestry instruction offered in 8 high schools of the region;
- Second conference on the role of schools in forestry, logging and lumbering education for youth, residents of the region and the needs of employers;
- A post fire-season conference on the causes and effects of the disastrous end of the 1955 season and definite plans to prevent a recurrence in 1956;
- Dedication of a community forest at Arcata and the leasing of a demonstration forest at Fortuna;
- 30,000 seedlings planted in burned-over areas by high school forestry students;
- Growing importance of the annual junior logging conference;
- Region winner in the annual fire prevention poster contest was awarded the Grand Prize by Western States Keep Green Committee at the Western Forestry and Conservation Conference—bringing the perpetual trophy to the Redwood Region in its first year.

The CRA sponsored tree farms total up to 32 with a total acreage of 220,380 and applications were received for an additional 33,000 acres.

Production of Redwood Lumber in United States

Year	M bd. ft.	Year	M bd. ft.
1899	360,167	1944	461,937
1905	411,689	1945	443,807
1910	543,493	1946	243,310
1915	418,824	1947	529,921
1920	476,003	1948	793,250
1925	510,639	1949	744,120
1930	403,072	1950	875,453
1935	328,862	1951	859,876
1940	388,845	1952	899,600
1941	455,536	1953	969,000
1942	461,552	1954	950,000*
1943	460,829	1955	950,000*

*Estimate

Source: U.S.F.S., Bureau of Census, Calif. Redwood Assoc.

WARM BEAUTY OF western pine lumber enhances many of the nation's finer homes.

Western Pine Boosts Output

1955 is record year for shipments and production, tops 8 billion feet

FOR THE SECOND CONSECUTIVE year the nation's Western Pine industry set all-time high records during 1955 for production and consumption, according to the Western Pine Association. But end-of-year slowdowns both in output and demand dropped the year's last quarter figures below those of the same period a year ago.

Industry mills shipped about 8,625,000,000 board feet during 1955 up 7 percent from 1954's 8,064,000,000 board feet. At the same time, the mills produced 8,678,000,000 board feet, 9.1 percent more than 1954's record-breaking 7,953,000,000 board feet.

These statistics cover Idaho white pine, ponderosa pine, sugar pine and lodgepole pine, which make up 55 percent of the region's total production, and associated species which include Inland Douglas fir, Engelmann spruce, incense cedar, Inland red cedar, larch and white fir.

It was the fifth time in the past eight years that a new production record was set. The high mark of 7.2 billion feet set in 1948 lasted until 1950, when it was nudged up to 7.7 billion. This was topped in 1953 and again in 1954, but in neither of these two record years was the 8-billion-foot mark reached. In 1955 the region's industry attained it readily despite a late-year slow-down due to construction credit restrictions.

THE WESTERN PINE INDUSTRY'S huge kiln drying facility was further expanded during the year with new units built, new kiln types studied for performance information, new kiln operators trained. The Western Pine Association's lumber seasoning staff, attached to the research laboratory, found interest keen everywhere. Seasoning club meetings were well attended.

The Western Pine research laboratory in southeast Portland, Ore., had a dozen or more studies in progress. To accommodate the growing work of the lab, the Association last year approved construction of a 50 x 50 two-story addition, on which work is now under way.

The far-flung Western Pine industry, operating in 12 states and over a commercial forest region totaling 87,300,000 acres, was impressed with its timber resources as reported in the preliminary edition of the Timber Resources Review of the U. S. Forest Service. Figures for the Western Pine region showed a sawtimber backlog of 620 billion feet, 140 billion more than the last previous official estimate, made in 1945.

While 73 percent of the commercial forest is government-owned (according to TRR), the 27 percent that is held by industry and other private owners now includes 5,877,000 acres of certified Western Pine Tree Farms. Last year saw 148 Tree Farms added, making the region's total exactly 800. Of the 800, about 72 percent are under 640 acres each. Idaho continues to set the pace in Western Pine Tree Farms, with 417 certified.

Production of Western Hemlock Lumber in the United States

(M Bd. Ft.)

1899—	549	**1944**—	729,990
1905—	95,182	**1945**—	610,335
1910—	174,052	**1946**—	655,827
1915—	374,415	**1947**—	1,243,574
1920—	584,744	**1948**—	783,434
1925—	1,234,154	**1949**—	694,679
1930—	1,065,506	**1950**—	925,801
1935—	250,840	**1951**—	1,484,306*
1940—	301,537	**1952**—	1,070,800
1941—	434,908	**1953**—	1,038,000
1942—	545,815	**1954**—	965,770
1943—	715,883		

*Includes Eastern hemlock for that year.

Source: Forest Service; Bureau of Census; West Coast Lumbermen's Association.

Lumber Production in the Western Pine Region, By States, 1930-1954

(M board feet)	1930	1940	1947	1948	1949	1950	1951	1952	1953	1954*
Arizona	95,497	128,776	219,987	247,400	216,824	246,804	277,515	275,608	295,000	313,590
California & Nevada	1,513,938	1,954,231	2,424,850	2,607,690	2,327,263	2,820,497	2,806,575	2,719,573	2,688,000	2,517,883
Colorado	54,564	79,183	144,752	152,291	138,458	151,829	150,473	144,931	168,000	166,628
Idaho	839,759	773,293	950,137	1,108,592	1,050,809	1,259,382	1,021,883	1,083,429	1,157,079	1,264,382
Montana	296,970	325,315	499,741	597,884	586,875	639,982	552,291	593,500	700,000	786,678
New Mexico	142,885	112,786	126,925	124,608	118,449	124,041	129,756	107,182	123,000	131,078
Oregon (East Side)	989,569	1,673,789	1,400,787	1,504,027	1,379,311	1,559,194	1,522,437	1,472,363	1,607,000	1,622,383
Oregon (Jackson & Josephine)	14,000	20,000	93,017	128,304	113,559	75,532	152,100	154,875	159,953	114,862
South Dakota	59,464	40,250	57,648	35,380	35,321	34,197	28,205	35,451	38,000	38,182
Utah	6,306	15,615	37,915	44,485	41,593	46,002	43,917	44,708	52,000	54,482
Washington (East Side)	534,427	570,885	573,876	620,805	597,143	667,538	683,205	707,931	823,000	837,530
Wyoming	25,131	57,223	80,805	57,941	54,175	62,120	71,762	74,556	90,000	105,313
Total Western Pine Region Production	4,572,510	5,751,346	6,610,440	7,224,407	6,659,780	7,687,118	7,440,119	7,414,107	7,881,032	7,952,991

Source: Western Pine Association

* Subject to revision.

Sales High, Production Up

British Columbia mills find 1955 brings more plant integration and gang saws

THE MARKET FOR BRITISH Columbia's lumber continued buoyant in 1955. While productive capacity in the mills was not appreciably increased, sales were at an all-time high figure. Value of lumber production was $176,600,000, compared with $153,300,000 the previous year, more than double the figure for 1946.

For the long term one of the most cheerful revelations of the year was that, according to the Forest Service inventory so far, there is a total of 133.2 billion cubic feet of mature timber in the province, or considerably more than twice as much as had been estimated ten years ago. The increase is largely attributed to the fact that considerable areas of forest that were considered inaccessible a decade ago are now within the range of commercial use, due in part to development of new logging and transportation techniques and rising prices for the end product.

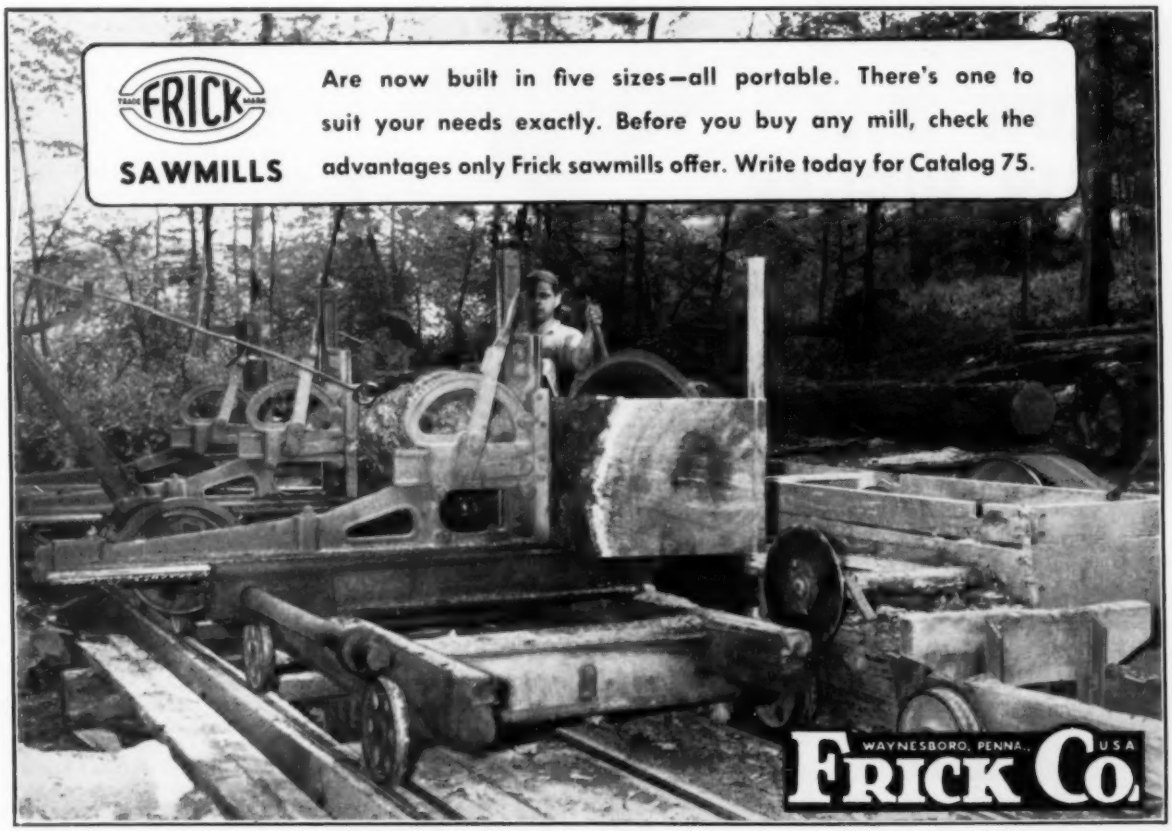
Disregarding the annual growth of 3,000,000 acres of immature timber on the coast and 35,000,000 acres in the interior, the present inventory would appear to provide a 90-year supply at present rate of cutting on the coast and a 260-year supply in the interior. The industry is urging, in view of this, that there should be no question of restricting the overall cut of either the coast or interior forests until the bulk of the mature timber has been harvested. The government, incidentally, owns 90.5 percent of the province's productive forest lands, 91.1 percent of the area of mature timber and 84.7 percent of the volume of mature timber. It also owns 91.4 percent of the area supporting immature timber and 86.4 percent of the cut-over lands not satisfactorily re-stocked.

ONE OF THE BASIC TRENDS in the lumber industry in B. C. is that in the coastal area, responsible for by far the largest proportion of production, lumber manufacture is declining in importance as a branch of the overall forest industry, whereas pulp and paper and plywood manufacture is climbing. The interior areas have been responsible for most of the increased lumber production in the past few years, and this tendency is likely to continue. Major lumber expansion in the province has been centered in the Prince George and southern interior.

The past year witnessed a continuance of integration in the industry, and on the coast more and more mills installed barkers and chippers so as to produce a profitable side-line that could be used in the expanding pulp mills. As the size of logs tended to become smaller, more mills installed gang saws, and this procedure has been followed in the interior as well as on tidewater.

B. C.'s lumber trade (50 percent of sales are to the U. S. and United Kingdom) has been flourishing because of widespread building activity, but it is generally more vulnerable than other forest products because of competition of substitutes, distance from markets and relatively high wages. The industry maintains that as easily accessible virgin timber stands, which at present constitute its main competitive advantage, are superseded by second growth smaller logs, B. C. manufacturers will be unable to pay stumpage costs as high as the competing coun-

(Continued on page 158)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Sales High in B.C.

(Continued from page 157)

tries which have relatively lower costs in terms of labor, transportation and logging.

THE B. C. LUMBER MANUFACTURERS Association is promoting a campaign aimed at increasing sales to Britain by popularizing use of wood frame construction. The average home in the U. K. consumes only 2,000 board feet of lumber, compared to 10,000 board feet in the average North American home.

Among company developments during the year were: Decision of Elk Falls Co. (Crown-Zellerbach) to build a large sawmill at Duncan Bay, first major tidewater mill in several years; purchase of the Flavelle Cedar and Timberland Lumber Co. sawmills by Canadian Collieries; acquisition of the S. W. Wilfert mill by the Sereth group; purchase of Anglo-Canadian Timber Products (formerly Glaspie Lumber Co.) by Puget Sound Pulp & Timber Co., launching of Hampton Lumber Mills near Boston Bar by L. M. Hampton of Willamina Lumber Co. in Oregon; sale of Peachland Sawmills to S. M. Simpson, Ltd., in Kelowna, establishment of a rayflo plant by Alaska Pine & Cellulose (Rayonier) to utilize cedar bark.

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U.S.-Canadian Trade in Timber Reaches High Proportions

• Importance of timber trade relationships between the U.S. and Canada is brought out in the recent Timber Resource Review compiled by the U. S. Forest Service and released in late 1955. Following is excerpt from TRR:

"Canada ranks third among the nations in volume of world trade; only the U. S. and U. K. exceed it. With respect to forest products, Canada is the world's leading exporter, having in 1952 an aggregate forest-product export equivalent to 1,625 million cubic feet of roundwood valued at 1.4 billion dollars. In that year, exports accounted for 45% of all wood utilized commercially. Approximately half of the lumber produced in Canada is currently exported and 75% of the paper and veneer; 10 to 12% of the plywood production is exported.

"The U.S. receives approximately ¾ of Canadian forest-products exports. It receives 99% of Canadian exports of veneer, 90% of paper, 85% of plywood, 82% wood pulp, 81% pulpwood and 67% of lumber."

'55 Lumber Cut Is Record

British Columbia sawmills again shattered all previous production records in 1955 with an estimated total of 4,850,000,000 board feet, compared with 4,482,000,000 board feet in 1954.

While the coast district showed a moderate gain over the previous year's production, the big increase was mainly accounted for by rising production of mills in the interior of the province.

Coast production climbed from 2,707,000,000 feet in 1954 to 2,775,000,000 in 1955, while interior mills' output was up from 1,775,000,000 in 1954 to 2,075,000,000 feet in 1955.

Figures for 1955 are estimated, and the B.C. Forest Service indicated that when all returns are tabulated the total for the province may exceed 5,000,000,000 board feet.

Lumber Production in British Columbia, 1910-55

	M bd. ft.		M bd. ft.
1910	1,169,907	1944	1,982,478
1920	1,443,270	1945	2,055,082
1925	1,724,832	1946	2,169,096
1930	1,928,598	1947	2,707,052
1935	1,610,347	1948	2,937,410
1936	2,023,708	1949	2,951,183
1937	2,072,675	1950	3,508,787
1938	2,044,876	1951	3,723,877
1939	2,276,033	1952	3,596,707
1940	2,324,408	1953	3,842,000
1941	2,407,800	1954	4,482,000
1942	2,303,552	1955	4,850,000
1943	1,941,966		

Lumber Production in Canada by Provinces, 1954 and 1955

M bd. ft.	1954	1955
Prince Edward Island	7,000	9,000
Nova Scotia	299,000	388,000
New Brunswick	243,000	276,000
Quebec	1,040,000	1,052,000
Ontario	722,000	763,000
Manitoba	57,000	50,000
Saskatchewan	90,000	90,000
Alberta	320,000	434,000
British Columbia	4,482,000	4,850,000
Yukon and Northwest Territories	8,000	7,000
TOTAL CANADA	7,268,000	7,919,000

British Columbia Sawmill Investment Is Large

• Total capital investment in plant and equipment of sawmills in British Columbia's coast district is estimated at $138,000,000, according to the B.C. Lumber Manufacturers Association. During the past six years new capital investment for mechanical improvements in these mills has exceeded $18,000,000.

"The general operating efficiency of the industry has been improved in many plants by installation of modern machinery such as one-man carriages, log barkers, electrification programs and the use of hydraulics in automatic controls. The log outturn of green lumber has been increased by installation of band headrigs and both whole log and cant gangs. In the past decade these have replaced circular saws in many mills, reducing the sawdust by about one-third."

Installation of whole log mechanical and hydraulic barkers, in addition to producing bark-free wood for pulp chips, increased production rate by up to 10 percent; improved quality of manufacture (less variation in sawing); extended life of saws by 20 percent to 25 percent; reduced clean-up costs by 50 percent; improved mill housekeeping with consequent safer working conditions.

Up to the end of 1955 barkers and pulp chippers had been installed in 24 of the mills represented by the association, involving capital investment of more than $4,500,000.

These barkers and chippers have enabled the recovery and conversion of mill residues sufficient to produce about 1,200,000 units of pulp chips, enough for 516,000 tons of chemical pulp, normally requiring 475,000,000 board feet of logs as raw material. According to the association, this would require 1,300,000 acres of productive forest lands to produce an equivalent annual yield of wood.

Some 30 coast mills are fully equipped with dry kilns and annually about 25 percent, or roughly 600,000,000 feet of coast production, is kiln dried.

The association claims that 65 percent of the raw material used in the forest industry of British Columbia goes into saw logs, 15 percent into pulp and paper, 10 percent into fuel and 10 percent into other uses as plywood. This compares with 58 percent for sawlogs in the U.S., 38 percent for other parts of Canada (apart from B.C.), 29 percent for Sweden and 40 percent for Norway. The world average is given as 40 percent.

There is a decline in the percentage of Douglas fir in the total lumber manufactured by coast mills. In 1947, for instance, Douglas fir accounted for 58.3 percent of total sawn lumber; in 1954, 51 percent. During the same period hemlock had climbed from 24.8 percent to 27.8 percent, cedar from 12.8 percent to 16.9 percent.

Lumber Production in Alaska, 1899-1955

Year	Number of mills reporting	Lumber Sawed (M Feet, B. M.) Total	Spruce	Hemlock	Cedar	All Other	Shingles (squares)
1899	10	6,571	6,056	15	[1]	[2]500	n.a.
1904	6	7,974	7,933	....	[1]	[2]41	1,158
1919	22	21,673	21,182	491	n.a.	n.a.	n.a.
1925	28	40,857	35,718	2,938	[1]	[2]2,201	3,295
1929	19	30,393	21,850	8,205	[1]	[2]338	2,943
1935	20	23,499	14,769	8,069	658	3	2,182
1939	24	25,885	18,162	6,071	1,595	57	2,471
1941	27	36,547	28,064	7,515	933	35	3,718
1945	35	59,056	51,623	6,258	1,175	n.a.	565
1946	42	57,506	47,487	8,710	1,296	13	2,432
1947	40	80,480	69,105	9,872	1,497	6	n.a.
1949	69	48,541	39,024	8,647	[4]870	n.a.	n.a.
1954[5]	22	70 055	65.000	5.000	55	....	....
1955[5]	20	64,183	46,827	83,349	9,007	727	....

[1] Included in "All Others." [2] Includes figures for cedar lumber. [3] Data not published to avoid disclosing operations of individual establishments. [4] Includes figures for birch. [5] Estimates based on log consumption on or within national forests.
Source: Bureau of Census; Forest Service.

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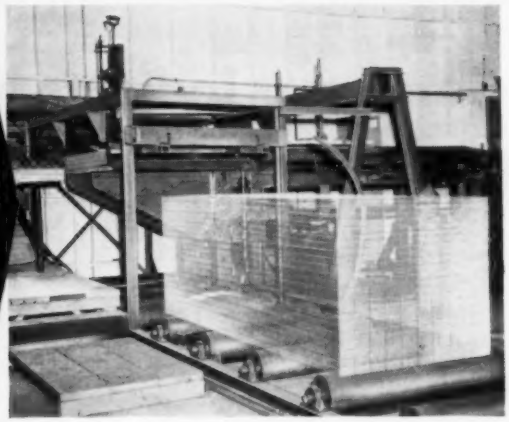

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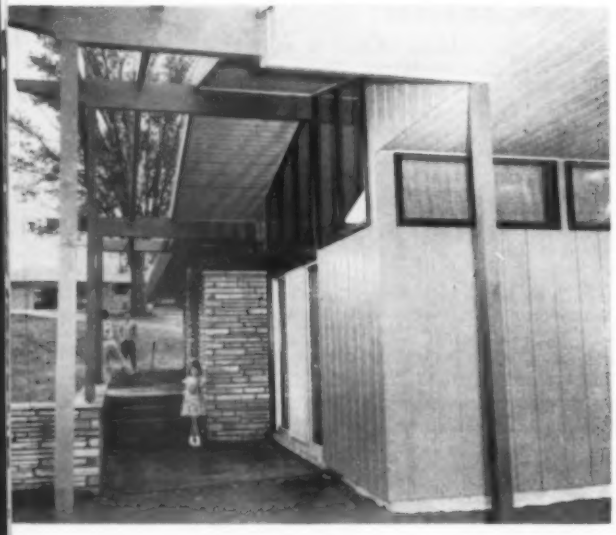

HERE ARE LONG glued laminated southern pine beams which support roof throughout residence and lend variety to exterior. Roof deck is of southern pine; its extension provides wide overhang to shade house wall from sun and rain. Vertical southern pine siding makes attractive appearance.

Gangsaws Indicate New Trend

Cost-conscious Southern pine region lowers production, ups utilization

WHILE SOUTHERN PINE PRODUCTION during 1955 showed an 8-percent improvement in production over the preceding period, the year was marked by caution on the part of operators. Production in 1955 was estimated at 8,696 million feet compared with 9,007 million feet in 1954. Housing starts plus industrial advancements helped mark the year.

Pressed by still higher stumpage costs and in many case an average deterioration of log sizes, many operators turned to improvement of productive equipment as a means of increasing lumber yield without raising labor costs per thousand feet. Interest in gang saws for use in connection with conventional bandsaw or circular rig headsaws was widespread and many were installed. In practice the dual installation permitted turning of a good log for quality where opportunity presented, with simple conversion of a small log into cants for the gang in many cases.

These installations were widespread in the central Gulf states including such companies as Bennett Lumber Co., Greenville, Ala.; T. R. Miller Mill Co., Brewton, Ala.; Riemers-Schneider Lumber Co., Hammond, La.; King Lumber Co., Forest, Miss.; Southern Lumber Co., Hermitage, Ark. A wide range of manufacturers was involved.

Interest continued in economic recovery of value from milling residues through installation of log barking and chipping facilities.

W. E. Parks Lumber Co., completed its new hardwood mill at Newellton, La., and the Ferriday Hardwood Company, Ferriday, La., was in final stages at year's end. Moffett Lumber Co., completed a new mill at Natchez, Miss. Of major proportions, the Angelina County Lumber Co., Lufkin, Texas, completed its modernization program during 1955. C. V. Nugent Lumber Co., Natchez, Miss., completely modernized its lumber mill from head rig to green chain.

SOUTHERN HARDWOOD PRODUCERS were aided alike by housing starts with demands for flooring and paneling, and by improvement in the furniture market occasioned by housing starts that called for new furnishings. Flooring demand was reflected in improvement in those facilities and by steel strapping consumption, which was up. New flooring plants went in at Hassell & Hughes Lbr. Co., Collinwood, Tenn.; Matthews Lumber Co., Mansfield, La.; Independence Lbr. Co., Independence, La., (owned by Clemons Bros., Amite, La.); and, Tremont Lumber Co., Joyce, La. Phillips Lbr. Co., Grenada, Miss., rebuilt its fire destroyed planing mill.

In general, sawmill machinery suppliers reported that demand for new equpiment was well below the lush immediate post-war period.

In the hardboard industry, the new plant of Wynnewood Products Co., at Jacksonville, Texas, was completed and went into production. A new Siempelkamp press also went into the plant of Crown Plastics, Inc., Forest Hill, Tenn. Southern plywood producers felt the full pressure of import competition during 1955, a condition prophesied during 1954. Pascagoula Veneer Co., Pascagoula, Miss., resumed production of plywood in its plant previously destroyed by fire.

Demand for equipment for handling lumber around the sawmill has remained good, but with an interesting trend toward larger units in lift forks and toward smaller units in "straddle" carriers. In lifts, the trend has been away from the 14 to 18 thousand pound to those of 20 to 26 thousand pound capacity. The straddles have shifted interest down to the 10 thousand pound size. Explanations offered for this have been that the small straddle is useful in lifting from the green chain, particularly in the smaller mills, but increased installations of lumber stackers has resulted in larger packages and higher stacking, which calls for the bigger lift unit.

Production of Southern Pine Lumber in U. S., 1869-1955

	M Bd. Ft.		M Bd. Ft.
1869	1,378,000	1943	9,961,589
1879	2,379,000	1944	8,132,194
1889	4,220,000	1945	7,210,066
1899	9,669,641	1946	9,375,859
1905	8,771,966	1947	9,473,360
1910	14,143,471	1948	Not available
1915	12,177,335		
1920	8,964,313	1949	8,258,694
1925	13,235,936	1950	9,939,069
1930	7,450,238	1951	8,495,000
1935	5,960,246	1952	8,775,000
1940	10,162,966	1953	8,854,000
1941	10,338,693	1954	8,007,000
1942	11,761,397	1955	8,772,000*

*THE LUMBERMAN'S estimate

Source: Forest Service, Bureau of Census, Lumber Survey Committee.

Who Gets the Redwood Lumber?

The following figures show the distribution of redwood lumber shipments to destinations by region, in M bd. ft.

	1950	1951
California	243,952	218,729
Western	10,242	7,484
Rocky Mtn.	7,021	6,230
Eastern	163,682	158,612
Export	889	1,926
U. S. Offshore	5,664	5,382
TOTAL	431,450	398,363
	1952	1953
California	242,926	257,198
Western	11,430	11,986
Rocky Mtn.	9,690	10,169
Eastern	192,255	227,045
Export	812	493
U. S. Offshore	5,296	7,971
TOTAL	462,409	514,862
	1954	1955
No. Calif.	167,969	175,311
So. Calif.	106,761	118,170
Western	14,638	13,397
Rocky Mt.	11,195	13,899
Eastern	276,808	316,992
Export	1,634	1,615
U. S. Offshore	6,426	9,487
TOTAL	585,431	648,871

Source: California Redwood Association.
Note: While the above table does not include **all** redwood lumber shippers, it does represent shipments made by mills cutting **most** of the redwood lumber.

Lumber Production Gains

(Continued from page 150)

distances. Milling costs will rise because of smaller logs. Pressure for higher prices will also come from increased labor and transportation costs.

Redwood Region

More permanency is the goal of the Redwood Region as it begins its adjustment to available timber supplies. With ownerships becoming stabilized for remaining redwood stands and privately owned Douglas fir becoming less available for open market buyers, there is a growing dependence on federally owned timber.

But if all the timber on the Six Rivers National Forest, principal supply source, were put on the market at its current sustained yield cut of 163 million board feet, it could supply only 10 percent of the region's present mill cut, which is now consuming 1½ billion feet yearly.

In 30 years from now annual production of redwood will be about 400 million board feet and fir about 100 million board feet. Peak production has been reached and a leveling off process will ensue.

In 1955 loggers in the Redwood Region turned their attention more and more to salvage logging, particularly in redwood timber. To handle this material some new equipment was put into use, such as the "hay-rack" or "chunk basket" truck developed by Hammond Lbr. Co. at its Big Lagoon operation. The stake body is hinged on one side and tilted at the pond to dump its load. Salvage mills, located close to the timber, are an important feature of such operations.

BIG TRACTORS were also put into use, such as the Caterpillar D9. The R. G. LeTourneau electric logger was also put into service. The region is a principal user of tractors equipped with front end log handling attachments and lift trucks designed for log handling. Several such heavy duty units were employed by California Timber Products Co., Annapolis; Simpson Redwood Co., Klamath; and Simonson Logging Co., Smith River.

A major mid-year regional event was the dedication of the Kelly Logging Road at Cloverdale. This 35-mile private arterial, which took almost two years to complete, taps an area of a billion and a half board feet of timber between Cloverdale and the coast. It is available as a toll road for private haulers.

• Price stability for the sanded grades of fir plywood lasted from September 1954 to the end of 1955. Early this year a small percentage increase was made on most items. Significantly, prices of most building materials were going up while that of plywood stayed even.

Condensed Table of Lumber Shipments From Pacific Coast States & B. C. As Reported by the Pacific Lumber Inspection Bureau

Waterborne Shipments:	1951	1952	1953	1954	1955
Foreign	1,713,401,097	1,344,650,091	1,333,427,618	1,517,474,340	1,424,703,897
Domestic ..	1,379,685,472	1,791,499,251	2,169,363,793	1,980,102,087	2,040,104,873
TOTAL	3,093,086,569	3,136,149,342	3,502,791,411	3,497,576,427	3,464,808,770

Source: Pacific Lumber Inspection Bureau

Origin of Waterborne Shipments of Lumber By the Various States and B. C. 1951-55

	1951	1952	1953	1954	1955
British Columbia.	1,146,291,685	1,148,052,422	1,391,664,206	1,579,945,430	1,412,058,955
Washington	764,157,039	703,860,563	802,930,417	685,025,368	723,135,640
Oregon	1,167,896,890	1,238,454,762	1,214,439,670	1,117,916,643	1,192,962,204
California	14,740,955	45,781,595	93,757,118	114,688,986	136,651,971
TOTAL	3,093,086,569	3,136,149,342	3,502,791,411	3,497,576,427	3,464,808,770

Source: Pacific Lumber Inspection Bureau

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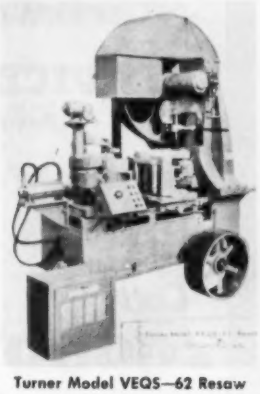

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Lumber

U.S., Mexico Lumber Trade Mutually Beneficial

• The United States is the source of 95% or more of Mexico's imports of forest products, and is also the destination of most of Mexico's exports of such products. In 1952 Mexico's excess of wood exports (excluding pulp and paper products) over wood imports in trade with the United States was equivalent to 9.5 million cubic feet of roundwood. Lumber accounted for about 97% of the volume of wood products exported to the United States and 83% of the wood volume imported from the United States.—T.R.R., 1955.

Mexican Lumber Production

• Compared with the U.S. and Canada, forest industry operations in Mexico are somewhat primitive, with a large share of felling by axe and handsaw and skidding by animal power. The recent U.S.F.S. Timber Resource Review reported on the sawmill situation, as follows:

"It is estimated that 170 sawmills operate in Mexico, producing in 1951 some 530 million board feet of lumber. In addition, possibly 100 million board feet or more was handsawn in that year, chiefly for railways crossties. Three Mexican mills use bandsaws; all others use circular saws. The band mills and a few of the larger circular mills are reasonably modern and efficient and can produce lumber meeting export specifications. Most of the other mills are not so well equipped, and are unable to produce well-sawn lumber.

"The largest band mill has a daily capacity of more than 100,000 board feet, and the circular mills produce an average of about 10,000 board feet daily. A few mills have dry kilns, and most of the lumber is air-dried briefly before it is marketed. Ordinarily lumber is graded only when it is exported. Currently pine lumber exports accounts for 58% of the value of all forest products exported (including non-wood forest products)."

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IN PORTLAND SINCE 1893

Output of Forest Products In West German Republic

• Continued shortages of raw materials results in a steady reduction in lumber production in West Germany. Reports state this causes 40% of the milling facilities to go unused. Following table shows steady increases in plywood, veneer and wood chip boards. All figures in cubic meters:

	1951	1952	1953	1954
Lumber—	8,836,974	7,906,679	7,104,069	7,102,217
Plywood—	479,827	419,259	484,624	629.395
Fibre boards—	182,977	145,035	117,925	152,396
Veneers—	175,515	180,172	217,526	278,111
Wood chip boards—	28,814	49,213	66,057	93,498

World Lumber Production (Both hardwood and softwood) By Leading Countries

(Figures given in 1000 cubic meters. 1 cu. m. = 424 bd. ft.)

	1954	1953	1952
United States	88,060	92,530	89,060
USSR	68,900	64,000	60,478
Canada	18,363	18,321	17,689
Japan	14,090	14,503	16,592
Germany, Western	7,103	7,104	7,907
Sweden	7,553	7,007	6,102
Brazil	3,360	4,305	4,361
Finland	4,801	4,274	3,570
France	4,890	4,100	4,300
Austria	3,881	3,282	3,032
Australia	3,099	3,013	2,993
WORLD TOTAL	247,730	244,970	238,170

Source: UN-FAO

• Cascades Plywood issued the following financial report: Net Sales—1954-$12,586,000; 1955-$14,523,000. Profit before Taxes—1954-$2,600,000; 1955-$3,222,000. Net Profit for the Year—1954-$1,404,000; 1955-$1,847,000. Per Share—1954-$2.41; 1955-$3.17. Sales of plywood for the year of 152,675,000 feet compare with 132,590,000 feet in the prior year. Sales in the Custom Mfg. Dept. showed an increase of $919,000, while separator sales declined $568,000. Sales of Lebanite and Lebanex, the Lebanite faced plywood, have also increased but not sufficiently to offset heavy expenses of depreciation and experimentation.

Softwood Lumber Production in the Pine Region of the Twelve Western States for the Years 1869-1954

NOTE: The 12 states include Arizona, California, Nevada, Colorado, Idaho, Montana, New Mexico, Eastern Oregon (including Pine only in Jackson & Josephine counties), South Dakota, Utah, Eastern Washington and Wyoming.

Year	Thousands of board feet							Total
	Ponderosa Pine	Idaho White Pine	Sugar Pine	Larch Douglas Fir	White Fir	Engelmann Spruce	Other Woods	
1869	285,000	1,000	35,000	25,000	.....	.....	12,000	358,000
1879	338,000	2,000	25,000	31,500	.....	.....	34,000	430,500
1889	695,000	5,000	41,000	76,000	.....	.....	54,000	871,000
1899	945,933	10,285	53,558	130,537	.....	.....	46,309	1,186,622
1904	1,290,526	17,155	93,906	145,746	.....	.....	144,819	1,692,152
1905	988,542	115,678	123,085	149,300	52,190	.....	51,789	1,480,584
1910	1,562,106	248,435	103,165	508,383	114,901	.....	143,364	2,680,354
1915	1,252,244	419,792	115,109	513,870	105,278	.....	117,847	2,524,140
1920	2,270,898	338,193	145,906	672,663	249,051	.....	150,648	3,827,359
1925	3,122,351	489,770	304,218	787,669	301,816	.....	156,363	5,162,187
1930	2,586,110	548,920	198,216	460,241	168,241	.....	122,016	4,083,744
1935	2,527,251	469,185	188,456	356,830	78,059	.....	95,028	3,714,809
1940	3,609,631	537,139	353,967	528,967	101,172	.....	166,881	5,297,757
1941	4,243,868	489,826	366,422	702,891	168,390	.....	190,711	6,162,108
1942	4,024,614	388,724	333,733	884,601	224,473	.....	197,282	6,053,427
1943	3,866,983	343,401	270,694	860,932	270,155	.....	185,309	5,797,474
1944	3,760,467	298,476	310,115	923,003	394,498	.....	228,833	5,915,392
1945	3,052,602	240,397	223,442	802,361	411,588	.....	203,480	4,933,870
1946	3,615,054	244,413	327,160	1,081,968	606,449	.....	274,450	6,149,494
1947	3,901,300	242,000	340,300	1,239,900	588,100	102,100	196,700	6,610,400
1948	4,224,900	272,100	306,100	1,455,500	657,600	118,200	190,000	7,224,400
1949	3,922,000	282,700	286,800	1,299,700	567,800	132,100	168,700	6,659,800
1950	4,116,600	343,300	320,000	1,670,100	865,700	164,200	207,200	7,687,100
1951	3,793,800	266,800	375,800	1,614,200	973,400	147,600	268,500	7,440,100
1952	3,664,100	252,600	348,000	1,688,300	977,000	206,300	277,800	7,414,100
1953	3,822,700	248,300	377,800	1,756,500	1,020,800	383,500	271,400	7,881,000
1954	3,533,983	234,597	335,630	1,961,974	1,034,187	543,214	309,406	7,952,991

Source: Compiled from statistics of Bureau of the Census Forest Service and Western Pine Association and released by the Association. White Fir includes Red Fir (Abies Magnifica). Other Woods Include: Lodgepole Pine, Western Red Cedar, Incense Cedar, Engelmann Spruce and Western Hemlock.

Production of Douglas Fir Lumber in the U. S. and Canada, 1869-1953

	Total U. S.	Oregon	Washington	California	Idaho	Montana	S. Rocky Mtn.	Br. Col.
1869	196,000	54,000	107,000	30,000	.....	5,000	.....	.....
1879	289,000	130,000	124,000	25,000	1,000	9,000	.....	.....
1889	1,206,000	301,000	847,000	25,000	3,000	30,000	.....	.....
1899	1,739,182	501,327	1,152,672	18,264	.....	.....	80	.....
1905	4,319,479	1,076,695	3,125,325	100,816	10,177	6,132	334	.....
1910	5,203,644	1,714,462	3,259,546	103,169	62,793	53,070	10,604	.....
1915	4,121,897	1,119,395	2,754,179	117,951	76,283	41,464	12,625	.....
1920	6,956,683	2,347,368	4,275,017	161,632	105,786	55,670	11,210	.....
1925	8,154,373	2,792,432	4,912,204	206,325	139,501	74,003	29,908	.....
1930	6,453,043	2,359,062	3,826,066	133,110	61,031	45,585	28,189	.....
1935	4,772,449	1,855,141	2,717,390	95,508	42,376	34,039	27,995	.....
1940	7,121,236	3,251,187	3,509,266	196,137	71,978	62,336	30,332	1,691,986
1941	8,531,845	4,069,319	3,973,881	248,488	129,176	86,518	24,460	1,525,479
1942	8,549,755	4,247,204	3,696,903	290,216	177,501	96,663	41,268	1,534,419
1943	7,950,928	4,266,487	3,091,452	328,395	157,136	75,953	31,505	1,233,953
1944	7,863,952	4,324,795	2,887,981	365,787	155,225	89,720	40,444	1,140,691
1945	6,237,312	3,501,773	2,128,029	372,885	135,592	67,532	31,501	.....
1946	7,639,635	4,599,106	2,241,463	507,066	145,295	99,573	47,132	1,128,325
1947	9,043,403	5,436,722	2,501,414	768,866	187,062*	114,147	35,192	1,410,170
1948	9,793,737	5,977,477	2,430,361	952,529	302,751*	210,896	42,360*	1,514,118
1949	9,074,424	5,909,695*	2,310,855*	1,179,641	288,420*	311,704*	32,302*	1,593,556
1950	9,983,988	6,512,669*	2,287,324*	1,202,798	379,943*	342,884*	57,919*	1,738,101
1951	10,056,324	6,940,843*	2,344,887*	1,610,959	342,103*	126,379.	38,754*	1,717,739
1952	10,539,700	6,905,957*	2,042,916*	1,718,300	345,409*	305,989*	41,785*	1,605,896
1953	10,685,300	6,389,600*	2,089,700*	1,500,000†	354,600*	300,600*	50,800*	1,700,000

†Unofficial—estimate only *Includes Larch east of the Cascades

Source: Forest Service; Bureau of Census, Western Pine Association

Production and export of principal forest products, Canada, 1952

Product	Units	Production	Total export	Total export as percentage of production	Export to the United States	
					Quantity	Percentage of total export
Lumber	Million board feet	6,780	3,340	49	2,252	67
Pulpwood[1]	Million cubic feet (wood & bark)	1,280	244	19	198	81
Woodpulp	Thousand short tons	8,968	1,941	22	1,589	82
Paper	Thousand short tons	7,202	5,526	77	4,990	90
Veneer[1,2]	Million square feet	551	408	74	400	98
Plywood[3]	Million square feet	595	72	12	61	85

[1]1951 figures.
[2]1/10-inch thickness basis. Does not include an unknown footage produced by the furniture and other veneer-using industries.
[3]1/4-inch thickness basis.
Source: U. S. Forest Service Timber Resource Review 1955.

Lumber Production by States

State	No. Mills[1]	M bd. ft.	Year[2]
Alabama	2,605	1,485,000	('53)
Alaska	55	70,055	('54)
Arizona	61	313,590	('54)
Ark. & Okla.	1,863	953,000	('53)
Calif. & Nev.	884	5,122,000	('53)
Colorado	403	166,628	('54)
Connecticut	191	20,306	('47)
Delaware	146	33,644	('47)
Florida	659	533,579	('47)
Georgia	2,867	2,240,000	('53)
Idaho	388	1,264,382	('54)
Illinois	1,155	99,794	('47)
Indiana	937	180,266	('47)
Iowa	686	45,093	('47)
Kansas (see Nebraska)			
Kentucky	2,168	438,722	('47)
Louisiana	914	807,000	('53)
Maine	742	459,271	('47)
Maryland	716	153,809	('47)
Mass.	473	132,244	('47)
Michigan	1,899	580,097	('47)
Minnesota	1,525	244,363	('47)
Mississippi	1,899	934,000	('53)
Missouri	2,672	235,000	('53)
Montana	407	786,678	('54)
Nebr. & Kansas	371	235,000	('53
Nevada (see Calif.)			
New Hamp.	479	322,509	('47)
New Jersey	238	32,423	('47)
New Mexico	162	131,078	('54)
New York	1,790	383,271	('47)
N. Carolina	4,588	1,756,000	('53)
N. Dakota	13	627,000	('47)
Ohio	1,644	254,000	('53)
Oklahoma	297	(see Arkansas)	
Oregon	1,466	8,410,000	('53)
Penna.	2,727	580,005	('47)
Rhode Isld.	23	2,544	('47)
S. Carolina	1,438	871,014	('47)
S. Dakota	70	38,182	('54)
Tennessee	2,567	563,000	('53)
Texas	1,012	1,122,000	('49)
Utah	142	54,452	('54)
Vermont	451	203,739	('47)
Virginia	3,101	1,200,000	('53)
Washington	808	3,150,132	('54)
W. Virginia	1,516	483,902	('47)
Wisconsin	7,776	485,806	('47)
Wyoming	170	105,313	('54)
Total Number Mills (Inc. Alaska)	**53,164**		

[1] According to census of manufactures (1947). (Note: new census of manufactures data will be issued during 1955.—Ed.)

[2] For latest year available.

Source: Bureau of Census, Western Pine Association, West Coast Lumbermen's Association.

Production of Western Cedar Lumber in the United States

(M Bd. Ft.)

Incense	Pt. Orford	W. Red
1941—40,392	72,706	181,230
1942—40,696	59,574	162,436
1943—31,722	59,397	152,600
1944—45,251	34,588	175,567
1945—52,524	37,269	187,803
1946—71,361	30,660	180,462
1947—79,543	16,607	218,173
1948— n.a	n.a.	279,478[1]
1949—35,317	7,469	221,346
1950—51,377	n.a.	254,000
1951—60,490	9,203	229,269
1952—80,800	n.a.	244,800
1953— n.a.	n.a.	229,000*
1954— n.a.	n.a.	220,442*

[1]All cedars. *Douglas fir region only.

Source: Forest Service, Bureau of Census, West Coast Lumbermen's Association.

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Lumber

Production of the Nation's Sawmills—1955

THE PRODUCTION OF LUMBER in the west was at a high level in 1955 as indicated in the following tabulation of individual mill production figures. More than thirty companies reported a cut in excess of 100,000,000 feet. Never before have so many mills been in this classification. The cut of individual Weyerhaeuser mills is not shown but the combined cut of all the Weyerhaeuser mills was approximately 1,200,000,000 feet BM.

The Lumberman has been compiling and publishing mill production figures for more than a quarter of a century. Originally data covered only Western mills but for many years now include major producers all over North America.

Following the western report appears the production figures for a large number of the leading sawmills in the South, Lake States, Alaska and Canada. For the cooperation of lumber companies everywhere in making these compilations possible, THE LUMBERMAN is very grateful.

Major Western Mills (Including B. C.)

FIRM NAME	LOCATION	LBR. FT. BM
POTLATCH FORESTS, INC.	Lewiston, Ida.	327,792,000
COOS BAY LUMBER CO.	Coos Bay, Ore.	187,317,104
CANADIAN WESTERN LUMBER CO.	Fraser Mills, B. C.	163,261,495
MACMILLAN & BLOEDEL, LTD.		
Can. White Pine Div.	Vancouver, B. C.	162,307,000
Somass Div.	Port Alberni, B. C.	127,121,000
Chemainus Div.	Chemainus, B. C.	140,286,000
Alberni-Pacific Div.	Port Alberni, B. C.	129,029,000
CANADIAN FOR PRO LTD.		
Eburne Division	Vancouver, B. C.	161,712,728
C. D. JOHNSON LBR. CORP.	Toledo, Ore.	139,902,000
FRUIT GROWERS SUPPLY CO.	Los Angeles, Calif.	139,000,000
SIMPSON LOGGING CO.	Shelton, Wash.	133,442,721
ROSEBURG LUMBER CO.	Roseburg, Ore.	130,400,000
ALASKA PINE CO. LTD.	New Westminster, B. C.	128,057,000
EDWARD HINES LUMBER CO.	Hines, Ore.	124,284,194
Westfir mill	Westfir, Ore.	61,352,000
BATE LUMBER CO.		
Merlin mill	Merlin, Ore.	56,790,773
Wallowa mill	Wallowa, Ore.	55,271,546
SOUTHWEST LUMBER MILLS INC.	McNary, Ariz.	124,083,177
UNIVERSAL LBR. & BOX CO. LTD.	Vancouver, B. C.	119,423,000
J. NEILS LUMBER CO.		
Libby mill	Libby, Mont.	103,228,395
Troy mill	Troy, Mont.	14,254,110
Klickitat mill	Klickitat, Wash.	46,474,467
DIAMOND MATCH CO.	Spokane, Wash.	117,901,000
BOISE PAYETTE LUMBER CO.	Boise, Ida.	117,080,352
SANTIAM LUMBER CO.	Lebanon, Ore.	116,022,690
THE MCCLOUD RIVER LBR. CO.	McCloud, Calif.	111,861,953
LONG-BELL LUMBER CO.		
Longview mill	Longview, Wash.	109,072,625
Weed mill	Weed, Calif.	80,000,000
Vernonia mill	Vernonia, Ore.	73,845,629
Gardiner mill	Gardiner, Ore.	58,971,000
Eugene mill	Eugene, Ore.	54,880,000
BRITISH COL. FOR PRO LTD.		
Cowichan Division	Youbou, B. C.	92,700,000
Victoria Division	Victoria, B. C.	96,600,000
Vancouver Division	Vancouver, B. C.	35,900,000
Hammond Division	Hammond, B. C.	49,900,000
BOOTH-KELLY LUMBER CO.	Springfield, Ore.	104,355,350
WESTERN FOREST INDUSTRIES	Honeymoon Bay, B. C.	103,942,868
THE PACIFIC LUMBER CO.	Scotia, Calif.	103,865,000
TAHAIS COMPANY, LTD.	Vancouver, B. C.	102,982,000
CASCADE LUMBER CO.	Yakima, Wash.	101,554,000
HAMMOND LUMBER CO.	Samoa, Calif.	98,726,000
UNION LUMBER CO.	Fort Bragg, Calif.	96,000,000
RALPH L. SMITH LBR. CO.	Anderson, Calif.	94,424,000
ST. PAUL & TACOMA LBR. CO.	Tacoma, Wash.	91,166,888
DIAMOND MATCH CO.	Chico, Calif.	89,000,000
ANACONDA COPPER MINING CO.	Bonner, Mont.	87,547,567
ROSS LUMBER CO.	Medford, Ore.	86,000,000
POPE & TALBOT INC.		
St. Helens mill	St. Helens, Ore.	80,696,000
Oakridge mill	Oakridge, Ore.	79,000,000
Port Gamble mill	Port Gamble, Wash.	63,659,312
PICKERING LUMBER CO.	Standard, Calif.	80,262,660
ELLINGSON LUMBER CO.	Baker, Ore.	80,000,000
OHIO MATCH CO.	Heutter, Ida.	79,100,000
WILLAMETTE VALLEY LBR. CO.	Dallas, Ore.	75,735,000
WILLAMETTE VALLEY LUMBER CO.	Foster, Ore.	73,752,007
U. S. PLYWOOD	Redding, Calif.	75,427,000
U. S. PLYWOOD	Seattle, Wash.	31,134,610
U. S. PLYWOOD (Associated Div.)	Eugene, Oregon	30,308,947
U. S. PLYWOOD	Mapleton, Oregon	18,911,100
MEDFORD CORP.	Medford, Ore.	75,082,000
B C MFG. CO. LTD.	New Westminster, BC.	73,151,000
BROOKS-SCANLON LUMBER CO.	Bend, Ore.	72,818,742
THE ROBERT DOLLAR CO.	Glendale, Ore.	72,613,807
VANVLEET LUMBER CO.	Rainier, Ore.	70,919,711
LHL LUMBER CO.	Carlton, Ore.	70,243,860
CLEMENS FOREST PRODUCTS LTD.	Philomath, Ore.	67,375,250
BILES-COLEMAN LBR. CO.	Omak, Wash.	66,718,000
DIAMOND LUMBER CO.	Glenwood, Ore.	66,288,000
KINZUA CORPORATION	Kinzua, Ore.	62,208,864
PAUL BUNYAN LUMBER CO.	Susanville, Calif.	61,159,530
GLENCO FOREST PRODUCTS	Sacramento, Calif.	61,845,000
TWIN FEATHER MILLS, INC.	Kamiah, Ida.	60,913,000
OLYMPIC HARDWOOD CO.	Raymond, Wash.	60,190,000
HUDSPETH PINE, INC.	Prineville, Ore.	59,109,279
W. A. WOODARD LUMBER CO.	Cottage Grove, Ore.	57,800,000
MCINTOSH LUMBER CO.	Blue Lake, Calif.	56,852,121
COOS HEAD TIMBER CO.	Coos Bay, Ore.	56,750,000
HILLCREST LUMBER CO.	Mesatchie Lake, BC.	56,372,141
NEW MEXICO TIMBER CO.	Albuquerque, N.M.	55,750,000
WESTERN MONTANA LBR. CO.	Missoula, Mont.	55,599,000
MT. EMILY LUMBER CO.	LaGrande, Ore.	55,562,000
COLLINS PINE CO.	Chester, Calif.	55,030,000
EUREKA REDWOOD LBR. CO.	Eureka, Calif.	54,807,800
MARTIN BROS. BOX CO.	Oakland, Oregon	53,686,808
UMPQUA PLYWOOD CORP.	Myrtle Creek, Ore.	51,704,599
FORTUNA SAWMILL INC.	Fortuna, Calif.	52,607,000
LINCOLN LUMBER CO.	Lincoln, Wash.	51,625,457
WALTON LUMBER CO.	Everett, Wash.	52,000,000
SPRINGFIELD LUMBER MILLS	Springfield, Ore.	51,614,660
INTERMOUNTAIN LUMBER CO.	Missoula, Mont.	51,000,000
WINTON LUMBER CO.	Martell, Calif.	50,311,560
COAST PACIFIC LBR. CO.	Eureka, Calif.	50,360,398
PAUL B. HULT LUMBER CO.	Dillard, Ore.	50,250,000
ABORIGINE LUMBER CO.	Longview, Wash.	49,678,940
CAL-IDA LUMBER CO.	Auburn, Calif.	48,000,000
DUKE CITY LUMBER CO.	Albuquerque, N.M.	48,000,000
ROCKPORT REDWOOD CO.	Rockport, Calif.	47,949,508
CALIFORNIA BARREL CO.	Arcata, Calif.	47,024,000
KLAMATH BASIN PINE MILLS INC.	Klamath Falls, Ore.	46,622,992
L & K LUMBER CO.	North Vancouver, B.C.	46,097,583
M B KING LUMBER CO. LTD.	North Vancouver, B.C.	46,126,000
WESTSIDE LUMBER CO.	Tuolumne, Calif.	46,000,000
ALLEY LUMBER CO. INC.	Medford, Ore.	45,675,794
HANSON-PACIFIC CORP.	Fortuna, Calif.	45,600,000
VALSETZ LUMBER CO.	Valsetz, Ore.	45,116,307
AL PIERCE LUMBER CO.	Coos Bay, Ore.	45,035,000
ELK LUMBER CO.	Medford, Ore.	44,676,000
HIGH SIERRA PINE MILLS	Oroville, Calif.	44,011,520
FEATHER RIVER PINE MILLS	Feather Falls, Calif.	43,663,252
MICHIGAN-CALIFORNIA LBR. CO.	Camino, Calif.	43,650,000
CELGAR DEVELOPMENT CO. LTD.	Vancouver, B.C.	43,445,000
DEER PARK PINE IND.	Deer Park, Wash.	42,147,243
DOLLAR & PATTERSON CO.	Glendale, Ore.	41,118,208
STEBCO INCORPORATED	Vancouver, Wash.	41,107,046
CLOVERDALE REDWOOD CO.	Cloverdale, Calif.	40,911,211
LOVENESS LBR. CO.	Malin, Ore.	40,300,000
PRECISION LUMBER CO.	Bayside, Calif.	40,000,000
FT. ST. JOHN LBR. CO.	Dawson Creek, B.C.	40,000,000
MOORE MILL & LUMBER CO.	Bandon, Oregon	39,684,289
SCOTT LUMBER CO.	Burney, Calif.	39,487,265
HOLLOW TREE LUMBER CO.	Ukiah, Calif.	39,000,000
PORTLAND LUMBER MILLS	Portland, Ore.	38,830,000
PACIFIC PINE CO. LTD.	New Westminster, B.C.	38,428,246
GILCHRIST LUMBER CO.	Gilchrist, Ore.	38,281,000
PINE PRODUCTS CO.	Prineville, Ore.	38,000,000
TWISP-WAGNER LBR. CO.	Twisp, Wash.	37,881,000
DWYER LUMBER CO.	Portland, Ore.	37,769,440
ALEXANDER-STEWART LBR. CO.	Prineville, Ore.	37,679,000
TYGH VALLEY LBR. CO.	Tygh Valley, Ore.	37,500,000
R R CROW & CO.	Saratoga, Wy.	37,000,000
MAIN LUMBER CO.	Redding, Calif.	37,000,000
YOUNGS BAY LUMBER CO.	Roseburg, Ore.	37,000,000
ANDERSON & MIDDLETON LBR. CO.	Aberdeen, Wash.	36,865,932
KOGAP LUMBER INDUSTRIES	Medford, Ore.	36,663,277
BRIDGE LUMBER CO. LTD.	Vancouver, B.C.	36,600,000
SNELLSTROM LUMBER CO.	Eugene, Oregon	36,535,787
ROSBORO LUMBER CO.	Springfield, Ore.	36,176,000
NETTLETON TIMBER CO.	Seattle, Wash.	36,143,000
PACIFIC COAST CO.	Willit, Calif.	36,117,230
NALOS LUMBER CO. LTD.	Vancouver, B. C.	36,078,503
BAUMAN SAWMILLS INC.	Sweet Home, Ore.	36,000,000
BLUE MOUNTAIN MILLS	John Day, Ore.	35,644,148
HARRIS PINE MILLS	Pendleton, Ore.	35,616,759
PESHASTIN LBR. & BOX CO.	Peshastin, Wash.	36,529,160
ARCATA REDWOOD CO.	Arcata, Calif.	35,500,000
TRINITY ALPS LBR. CO.	Hayfork, Calif.	35,429,825
OREGON LUMBER CO.	Baker, Oregon	35,270,789
WARM SPRINGS LBR. CO.	Warm Springs, Ore.	35,000,000
BLAGEN LUMBER CO.	White Pines, Calif.	34,943,840
LIONS GATE LBR. CO. LTD.	North Vancouver, B.C.	34,909,487
SHEPARD & MORSE LUMBER CO.	Westport, Ore.	34,884,089
OREGON LUMBER CO.	Dee, Ore.	34,839,267
SACRAMENTO LBR. & BOX CO.	Woodleaf, Calif.	34,660,000
HOLMES-EUREKA LBR. CO.	Eureka, Calif.	34,468,706
CLOVER VALLEY LBR. CO.	Loyalton, Calif.	34,442,520
UKIAH PINE LBR. CO.	Potter Valley, Calif.	34,291,620
SPECKERT LBR. CO.	Marysville, Calif.	34,267,010
SOUTH COAST LUMBER CO.	Bookings, Oregon	34,199,438
TIMBERLAND LUMBER CO.	New Westminster, B.C.	34,000,000
E K WOOD LBR. CO.	Reedsport, Ore.	33,936,116
WOOD PRODUCTS CORP.	Chehalis, Wash.	33,926,404
MOORE-WHITTONGTON LBR. CO.	Victoria, B.C.	33,819,000
STIMSON LUMBER CO.	Forest Grove, Ore.	32,937,177
BROUGHTON LUMBER CO.	Underwood, Ore.	32,560,000
FLAVELLE CEDAR CO.	Port Moody, B.C.	32,475,000
OCHOCO LUMBER CO.	Prineville, Ore.	32,437,000
DOUBLE DEE LUMBER CO.	Central Point, Ore.	32,399,000
CRANE MILLS	Paskenta, Calif.	32,242,970
FREMONT SAWMILL CO.	Lakeview, Ore.	32,145,000
CONSUMERS CO-OPERATIVE ASSN.	Swisshome, Ore.	32,000,000
SEABOARD LUMBER CO.	Seattle, Wash.	32,000,000
WILBUR LUMBER CO.	Wilbur, Ore.	32,000,000

FIRM NAME	LOCATION	LBR. FT. BM
MIDSTATE LUMBER & SUPPLY CO.	Prineville, Ore.	31,600,000
FISHER LBR. CO.	Marcola, Ore.	31,500,000
EVANS PRODUCTS CO.	Coos Bay, Ore.	31,440,000
GIUSTINA BROS.	Eugene, Ore.	31,220,000
ASSOCIATED LBR. & BOX CO.	Wiseyville, Calif.	31,213,593
KAIBAB LUMBER CO.	Fredonia, Ariz.	31,005,450
CASCADIA LUMBER CO.	Toledo, Ore.	30,866,243
SOUND LUMBER CO.	Arcata, Calif.	30,794,000
KOOTENAY FOREST PRO., LTD.	Nelson, B.C.	30,554,800
ECLIPSE LUMBER CO.	Everett, Wash.	30,331,000
KAPPLER LUMBER CO.	Mulino, Ore.	30,057,712
LITHIA LUMBER CO.	Ashland, Ore.	29,664,008
ROTHER LUMBER COMPANY	Missoula, Mont.	29,500,000
WETZEL-QUIATT LBR. CO.	Omo Ranch, Calif.	29,000,000
FORWARD BROS. LUMBER SALES	Red Bluff, Calif.	28,798,100
L CARDIFF, INC.	Pierce, Ida.	28,750,000
TAHOE TIMBER CO.	Reno, Nev.	28,739,320
CONSOLIDATED PINE INC.	Prineville, Ore.	28,550,000
ST. MARIES LBR. CO.	St. Maries, Ida.	28,500,000
KEYSTONE LUMBER CO.	Riddle, Ore.	28,350,000
ANGLO-CANADIAN TBR. PRO. CO. LTD.	North Vancouver, B.C.	28,224,000
PACKWOOD LBR. CO.	Packwood, Wash.	28,039,000
NORTHERN REDWOOD LBR. CO.	Korbel, Calif.	27,835,893
STOMAR LUMBER CO.	Eugene, Ore.	27,712,000
BUCHANAN LUMBER CO.	Olympia, Wash.	27,604,490
HALLOCK & HOWARD LBR. CO.	Winchester, Ida.	27,542,000
WAUNA LUMBER CO.	Wauna, Ore.	27,502,268
CALDOR LUMBER CO.	Diamond Springs, Calif.	27,357,750
RICKINI LUMBER CO.	Cottage Grove, Ore.	27,000,000
LONG LAKE LUMBER CO.	Spokane, Wash.	27,000,000
CAR-AD-CO COMPANY	Klamath Falls, Ore.	26,750,000
DICKMAN LUMBER CO.	Tacoma, Wash.	26,517,000
S M SIMPSON LTD.	Kelowna, B.C.	26,500,000
MODOC LUMBER CO.	Klamath Falls, Ore.	26,962,378
BROWNS TIE & TBR. CO.	McCall, Ida.	26,914,000
IVORY PINE CO.	Dinuba, Calif.	26,263,000
STOCKTON BOX CO.	Stockton, Calif.	26,242,000
KLAMATH LBR. & BOX CO.	Klamath Falls, Ore.	26,124,667
SMITH RIVER LBR. CO.	Drain, Ore.	25,922,662
HUMBOLDT FIR, INC.	Hoopa, California	25,500,000
REDDING PINE MILLS	Redding, Calif.	25,500,000
MURPHY LUMBER CO.	Grand Ronde, Ore.	25,400,000
EAGLE LAKE SAWMILLS LTD.	Criscome, B.C.	25,338,000
SEATTLE CEDAR LBR. MFG. CO.	Seattle, Wash.	25,292,000
EUREKA SAWMILLS LTD.	Nanaimo, B.C.	25,000,000
PARKS LOGGING	Nanaimo, B.C.	19,000,000
AMERICAN FOR. PRO. CO.	Lakeview, Ore.	24,858,510
WILLOW RANCH LUMBER CO.	Willow Ranch, Calif.	24,857,000
HULT LUMBER CO.	Junction City, Ore.	24,832,000
HUMBOLT LUMBER COR.	Arcata, Calif.	24,439,782
A. F. LOWES LUMBER CO.	Mollala, Ore.	24,382,000
SUGAR PINE LUMBER CO.	Arcata, Calif.	24,045,190
MT. JUNE FOR. PRO. CO.	Springfield, Ore.	24,000,000
SPANGLER & LORENZ LBR. CO.	Spalding, Ida.	24,000,000
HEROW MILLS	Central Valley, Calif.	23,819,380
HAROLD E. CASTEEL INDUSTRIES	Ukiah, Calif.	23,585,567
CAPE ARAGO LBR. CO.	Empire, Ore.	23,129,000
TITE KNOT PINE MILLS	Redmond, Ore.	23,097,000
MOUNTAIN FIR LBR. CO.	Independence, Ore.	23,035,000
JONES LUMBER CO.	Portland, Ore.	23,000,000
WILDWOOD LUMBER CO.	Red Bluff, Calif.	23,000,000
M R PRESTRIDGE LBR. CO.	Alamogordo, N.M.	22,704,000
MOORE TIMBER PRODUCTS INC.	Grants Pass, Ore.	22,603,000
HARBOUR SAWMILLS LTD.	Victoria, B.C.	22,470,000
McDONALD CEDAR PRO. CO.	Fort Langley, B.C.	22,365,487
CASCADE LOCKS LBR. CO.	Cascade Locks, Ore.	22,240,000
WHITE PINE LBR. CO.	Alturas, Calif.	22,188,548
FALL CREEK LUMBER CO.	Fall Creek, Ore.	22,125,000
POT CREEK LOG. & LBR. CO.	Santa Fe, N.M.	21,850,000
CALDWELL LBR. & BOX CO.	Caldwell, Ida.	21,728,505
DAHL PINE CO.	Sisters, Ore.	21,695,590
DIBOLD MILLS	Smith River, Calif.	21,551,190
BROWNSVILLE SAWMILLS LTD.	New Westminster, B.C.	21,500,000
COLUMBIA VALLEY LBR. CO.	Bellingham, Wash.	21,379,969
TRASK LUMBER CO.	Tillamook, Ore.	21,379,969
ABORIGINE LUMBER CO.	Fort Bragg, Calif.	21,220,518
TIMBER PRODUCTS OF OREGON	Medford, Ore.	21,200,000
LARKINS LUMBER CO.	Forest Grove, Ore.	21,000,000
WARREN LAMB LUMBER CO.	Rapid City, S. D.	21,000,000
GRAEAGLE LUMBER CO.	Graeagle, Calif.	20,936,877
BURKLAND LUMBER CO.	Turner, Ore.	20,859,000
PLUM CREEK LOGGING CO.	Columbia Falls, Mont.	20,683,960
AMERICAN MILL CO.	Aberdeen, Wash.	20,491,000
BAY LUMBER CO.	Vancouver, B.C.	20,400,000
CABAX MILLS	Grants Pass, Ore.	20,317,402
MAGNOLIA LUMBER CORP., INC.	Ashland, Oregon	20,199,457
EVERETT LUMBER CO.	Everett, Wash.	20,084,551
MT. SHASTA PINE MFG. CO.	Mt. Shasta, Calif.	20,009,000
LEONARD LUNDGREN LUMBER CO.	Bend, Ore.	20,000,000
MEADOW VALLEY LUMBER CO.	Quincy, Calif.	19,891,000
CALVADA LUMBER CO.	Quincy, Calif.	19,795,000
STANDARD LBR. & MFG. CO.	Carlsborg, Wash.	19,350,000
EUREKA SAWMILLS LTD.	Nanaimo, B.C.	19,000,000
KINGSLEY LUMBER CO.	Portland, Ore.	19,000,000
TRINITY NATIONAL LUMBER CO.	Fort Seward, Calif.	18,789,563
DOUGLAS COUNTY LUMBER CO.	Roseburg, Ore.	18,688,000
PLACERVILLE LUMBER CO.	Placerville, Calif.	18,037,981
AIR KING MFG. CO.	Tigard, Ore.	18,000,000
OREGON PULP & PAPER CO.	Salem, Ore.	18,000,000
WAGNER BROS. LUMBER CO.	Longview, Wash.	17,661,877
MT. WHITNEY LUMBER CO.	Johnsonville, Calif.	17,300,000
WILLITS REDWOOD PRODUCTS CO.	Willits, Calif.	17,100,000
BARKER-WILLAMETTE LUMBER CO.	Eugene, Ore.	17,000,000
STIMSON MILL CO.	Seattle, Wash.	17,000,000
WESTERN STUDS	Arcata, California	16,947,232
ASSOCIATED LUMBER & BOX CO.	Dorris, California	16,643,960
CALIF. TIMBER PRO. CO.	Annapolis, Calif.	16,612,821
ZELLNER LUMBER CO.	Eugene, Ore.	16,562,242
PIONEER LUMBER CO.	Crescent City, Calif.	16,510,528
BLAGEN MILL CO. (Picco Div.)	Montesano, Wash.	15,655,000
MANNING TBR. PRODUCTS CO. LTD.	Victoria, B.C.	14,903,000
RIDGEWOOD LBR. CO.	Willits, Calif.	13,349,725
YELLOWSTONE PINE LBR. CO.	Bellgrade, Mont.	12,000,000
ALOHA LUMBER CO.	Aloha, Wash.	11,641,473
MONROE LUMBER CO.	Eugene, Ore.	7,880,000
CORVALLIS LBR. CO.	Corvallis, Ore.	6,898,000

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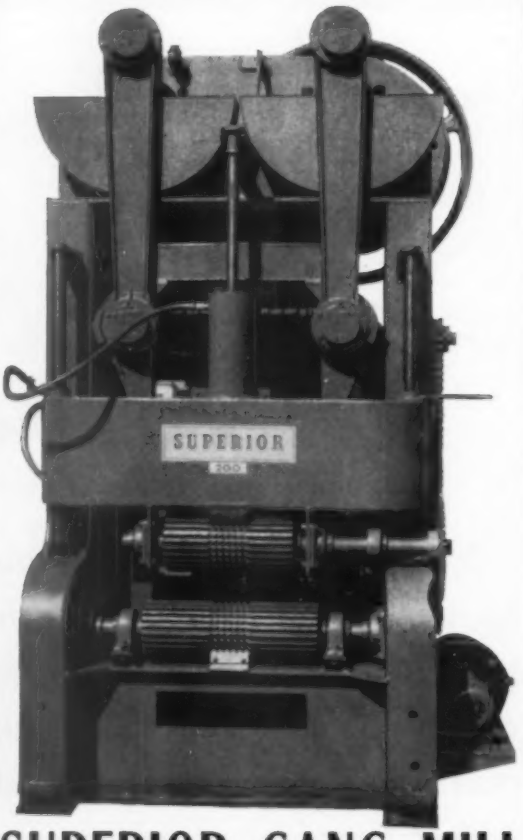

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FIRM NAME	LOCATION	LBR. FT. BM
DIERKS LUMBER & COAL CO.	Kansas City, Mo.	113,488,000
FROST LUMBER INDUSTRIES	Shreveport, La.	86,000,000
SOUTHERN PINE LUMBER CO.	Dibboll, Texas	81,172,299
E. L. BRUCE CO.	Memphis, Tennessee	77,250,000
CROSSETT LUMBER CO.	Crossett, Arkansas	74,437,000
ROY O. MARTIN LUMBER CO.	Alexandria, La.	55,450,000
RUSSELLVILLE LUMBER CO.	Sumter, South Carolina	54,617,534
SOUTHERN LUMBER CO.	Warren, Arkansas	47,224,000
BRADLEY LUMBER CO.	Warren, Arkansas	45,877,679
ANDERSON-TULLY CO.	Memphis, Tennessee	45,248,758
KIRBY LUMBER CORPORATION	Houston ,Texas	43,116,000
WILLIAM RITTER LUMBER CO.	Columbus, Ohio	42,381,965
FORDYCE LUMBER CO.	Fordyce, Arkansas	36,400,000
SCOTCH LUMBER CO.	Fulton, Alabama	35,500,000
BURRUSS LAND & LUMBER CO.	Lynchburg, Virginia	35,000,000
W. T. SMITH LUMBER CO.	Chapman, Alabama	32,912,367
W. T. CARTER & BROTHERS	Camden, Texas	32,327,352
HILLYEAR-DEUTSCH-EDWARDS CO.	Oakdale, La.	31,789,809
VESTAL LUMBER & MFG. CO.	Knoxville, Tennessee	31,295,000
TREMONT LUMBER CO.	Joyce, La.	29,965,000
W. E. BELCHER LUMBER CO.	Centreville, Ala.	29,532,612
WILLIAMS & MCKEITHAN LUMBER CO.	Lynchburg, Virginia	29,138,764
ALLISON LUMBER CO.	Bellamy, Alabama	28,986,670
OZAN LUMBER CO.	Prescott, Arkansas	28,854,775
MOBILE RIVER SAW MILL CO.	Mt. Vernon, Ala.	26,720,000
WOODWARD-WALKER LUMBER CO.	Taylor, La.	26,150,000
GULF LUMBER CO.	Mobile, Ala.	25,846,345
CROSBY LUMBER & MFG. CO.	Crosby, Mississippi	25,451,343
URANIA LUMBER COMPANY	Urania, Louisiana	25,202,000
BARNES LUMBER COMPANY	Charlottesville, Va.	25,000,000
A. DEWEESE LUMBER CO.	Philadelphia, Miss.	24,914,751
BELCHER & SON	Bluefield, West Va.	24,519,518
MOWER LUMBER CO.	Charleston, West Va.	24,000,000
GREEN BROTHERS LUMBER CO.	Elizabethtown, N. C.	22,697,352
PHILLIPS LUMBER COMPANY	Fupbra, Mississippi	22,000,000
PAT BROWN LUMBER CO.	High Point, N. C.	21,993,606
ANGELINA COUNTY LUMBER CO.	Kelts, Texas	21,847,704
ALGER-SULLIVAN LUMBER CO.	Century, Florida	21,658,305
FOSTER LUMBER CO.	Fostoria, Texas	21,240,686
CAMP MFG. CO.	Franklin, Va.	20,565,749
EDENS-BIRCH LUMBER CO.	Corrigan, Texas	20,295,000
CHICAGO MILL & LUMBER CO.	Helena, Arkansas	20,029,582
L. R. FOREMAN & SONS LUMBER CO.	Elizabeth City, N.C.	20,000,000
JEFFREYS-MCELRATH MFG. CO.	Macon, Ga.	20,000,000
SLEDGE LUMBER CO.	Whiteville, N.C.	19,671,000
HOLLY HILL LUMBER CO.	Holly Hill, S.C.	19,500,000
KING LUMBER INDUSTRIES	Canton, Mississippi	18,346,315
A. B. COOK LUMBER CO.	Malvern, Arkansas	18,000,000
CHAPMAN & DEWEY LUMBER CO.	Memphis, Tennessee	17,998,226
J. A. BENTLEY LUMBER COMPANY	Zimmerman, Louisiana	17,578,826
RICHMOND CEDAR WORKS	Norfolk, Va.	17,531,071
W. A. BELCHER LUMBER	Birmingham, Ala.	17,500,000
NICKEY BROTHERS	Memphis, Tenn.	17,000,000
BUTLER LUMBER CO.	Chase City, Florida	16,950,000
E. A. STEWART LUMBER CO.	Texarkana, Texas	16,565,000
GURDON LUMBER COMPANY	Gurdon, Arkansas	16,000,000
FARRIS HARDWOOD LUMBER CO.	Nashville, Tennessee	16,000,000
BATE LUMBER COMPANY	New Bern, N.C.	15,812,000
REYNOLDS & MANLEY LUMBER CO.	Savannah, Georgia	15,804,061
SUWANEE LONGLEAF MFG. CO.	Fargo, Georgia	15,764,000
T. R. MILLER MILL COMPANY	Brewton, Alabama	15,494,046
J. M. JONES LUMBER CO.	Natchez, Mississippi	15,000,000
J. L. WILLIAMS & SONS	Sheridan, Arkansas	15,000,000
GENNETT LUMBER CO.	Asheville, N.C.	15,000,000
COMMONWEALTH LUMBER CO.	Murphy, N.C.	14,873,074
JEFFREYS, SPAULDING MFG. CO.	Chase City, Va.	14,729,143
W. S. FOX & SONS	Pine Bluff, Arkansas	14,563,501
WILLIAMS LUMBER CO.	Rocky Mount, N.C.	14,500,000
LIGHTSEY BROTHERS	Miley, South Carolina	14,470,121
LOUISIANA CYPRESS LUMBER CO.	Ponchatoula, Louisiana	14,000,000
LOUISIANA LONGLEAF LUMBER CO.	Fisher, La.	14,000,000
CLANCY LUMBER COMPANY	Grayson, Ala.	14,000,000
MARSHALL LUMBER CO.	Marion, N.C.	13,897,000
WAX LUMBER CO.	Woodville, Miss.	13,791,305
SMITHFIELD LUMBER COMPANY	Smithfield, N.C.	13,769,874
URBANA LUMBER CO.	Urbana, Arkansas	13,683,000
CLINTON LUMBER CO.	Retal, Mississippi	13,650,579
SEAGROVE LUMBER CO.	Seagrove, N.C.	13,630,731
ALEXANDER BROTHERS LUMBER CO.	Columbus, Ga.	13,241,391
O. L. PAYNE	Wells, Texas	13,014,917
PERRY LUMBER CO. OF SELMA	Selma, N.C.	12,850,000
MILLEN LUMBER CO.	Millen, Ga.	12,624,518
STERLING LUMBER & SUPPLY CO.	Goodwater, Alabama	12,401,862
L. D. KELLOGG LUMBER CO., INC.	Alexandria, La.	12,255,000
DARGAN LUMBER MFG. CO.	Conway, S.C.	12,080,000
WOODVILLE LUMBER CO.	Woodville, Texas	12,020,984
ANDERSON MFG. CO.	Tenaha, Texas	12,000,000
STANLEY W. GATES	Oakdale, La.	12,000,000
SULLIVAN LUMBER CO.	Preston, Ga.	11,973,206
ELY-THOMAS LUMBER CO.	Camden-on-Gauley, W. Va.	11,842,697
ELLIJAY LUMBER CO.	Blue Ridge, Ga.	11,617,000
FLACK-JONES LUMBER CO.	Ridgeville, S.C.	11,587,759
H. D. FOOTE LUMBER CO.	Alexandria, La.	11,380,242
GEORGIA-PACIFIC PLYWOOD CO.	Dumas, Arkansas	11,287,543
DACUS LUMBER CO.	West Memphis, Arkansas	11,214,227
LEGGETT LUMBER CO.	Livingston, Texas	11,000,000
A. B. HURTSBORO LUMBER CO.	Hurtsboro, Ala.	11,000,000
J. WALTER WRIGHT LUMBER CO.	Bristol, Tenn.	11,000,000
MARION LUMBER CO.	Marion, S.C.	11,000,000
CLEVELAND LUMBER CO.	Cleveland, Ga.	11,000,000
LOUISIANA DELTA CORP.	Trout, La.	10,983,410
N. C. EDENS LUMBER CO.	Cleveland, Texas	10,928,000
HOOD LUMBER CO.	Hermanville, Miss.	10,641,341
CARY LUMBER CO.	Morrisville, N.C.	10,600,000
CROSBY FOREST PRODUCTS CO.	Picayune, Miss.	10,545,860
JACOBS LUMBER CO.	Americus, Ga.	10,492,000
UNION POINT LUMBER CO.	Union Point, Ga.	10,350,000
MULLINS LUMBER CO.	Mullins, S.C.	10,322,542
W. A. RANSOM LUMBER CO.	Harahan, La.	10,155,552
LONG-BELL LUMBER CO.	Quitman, Miss.	10,000,000
MELVIN LUMBER CO.	Melvin, Ala.	10,000,000
FULLER LUMBER CO.	Lewisville, Ark.	10,000,000

FIRM NAME	LOCATION	LBR. FT. BM
BOND BROTHERS	Louisville, Kentucky	10,000,000
CORINTH PLANING MILL CO.	Corinth, Miss.	10,000,000
SCOTT LUMBER CO.	Henderson, Kentucky	10,000,000
COUNCIL WOOD PRODUCTS	Orangeburg, S.C.	10,000,000
W. C. BROOKS & SON, INC.	Tappahannock, Va.	9,842,736
CHERRY RIVER BOOM & LUMBER CO.	Richwood, W. Va.	9,747,775
W. T. VICK LUMBER CO.	Hamilton, Ala.	9,693,572
REYNOLDS BROTHERS LUMBER CO.	Albany, Ga.	9,649,001
NACOGDOCHES COUNTY LUMBER CO.	Nacogdoches, Texas	9,600,000
BELLGRADE LUMBER COMPANY	Memphis, Tenn.	9,692,210
C. L. GRAY LUMBER CO.	Meridian, Miss.	9,500,000
GEORGIA-PACIFIC PLYWOOD CO.	Fairfax, S.C.	9,500,000
ASHEPOO RIVER LUMBER CO.	Ashepoo, S.C.	9,374,602
REIMERS-SCHNEIDER CO., INC.	Hammond, La.	9,258,781
LUMBER RIVER MFG. CO., INC.	Lumberton, N.C.	9,032,573
BOETTCHER LUMBER CO.	Huntsville, Texas	8,986,130
EUREKA LUMBER	Washington, N.C.	8,768,000
OLON BELCHER LUMBER CO.	Brent, Ala.	8,643,000
CONASAUGA RIVER LUMBER CO.	Conasauga, Tenn.	8,212,740
BEATRICE LUMBER CO.	Beatrice, Alabama	8,190,000
KELLOGG LUMBER CO.	Monroe, La.	8,187,583
LAKESIDE LUMBER CO.	Chatham, La.	8,173,286
LEXINGTON LUMBER CO.	Orangeburg, S.C.	8,166,129
MASON LUMBER CO.	Madison, Ga.	8,121,051
NEAL LUMBER & MFG. CO.	Blountstown, Florida	8,041,000
W. E. PARKS LUMBER CO.	Newellton, La.	8,032,399
J. F. BROWNING LUMBER CO.	Riceboro, Ga.	8,000,000
DAVIS BROTHERS LUMBER CO., LTD.	Ansley, La.	7,936,593
CHRISTIAN LUMBER CO.	Monticello, Kentucky	7,800,000
VIDOR LUMBER CO.	Vidor, Texas	7,697,802
HARLESS LUMBER CO., INC.	Lake Charles, La.	7,658,995
FARRIS LUMBER CO.	Morton, Miss.	7,453,920
ST. JOE LUMBER & EXPORT CO.	Port St. Joe, Florida	7,240,235
MISSISSIPPI VALLEY HARDWOOD CO.	Jonesville, La.	7,061,749
McGOWIN LUMBER CO.	Pine Apple, Ala.	7,000,000
PRICE PASCHAL LUMBER CO.	Brandon, Miss.	7,101,982
R. F. LARNED & SON	Natchez, Miss.	6,840,000
McGEHEE LUMBER CO.	Natchez, Miss.	6,643,749
ROPER BROTHERS LUMBER CO.	Petersburg, Va.	6,536,396
TUNICA HARDWOOD CO., INC.	Tunica, La.	6,500,000
C. ARNOLD & SONS	Cullman, Ala.	6,500,000
J. C. MARTIN LUMBER CO.	Waynesboro, Miss.	6,500,000
JIM WALLIS LUMBER CO., INC.	Talladega, Ala.	6,197,285
MAGAZINE LUMBER CO.	Bogalusa, La.	6,000,000
H. M. WALKER LUMBER CO.	Battleboro, N.C.	5,684,014
WALTON LUMBER CO.	Richmond, Va.	5,672,077
GRAHAM LUMBER CO.	Maplesville, Ala.	5,328,000
HAYNES LUMBER CO.	Clinton, La.	5,100,000
SWIFT-HUNTER LUMBER CO.	Atmore, Ala.	5,000,000
CORDELE SASH DOOR & LUMBER CO.	Cordele, Georgia	5,000,000
ROGERS & EVANS LUMBER CO.	Converse, La.	4,714,266
BENNETT LUMBER CO.	Greenville, Ala.	4,197,369
LAYFIELD & SONS	Providence Forge, Virginia	4,162,852
COLUMBUS LUMBER & SUPPLY CO.	Columbus, Ga.	4,000,000
BEECHWOOD LUMBER CO.	Manchester, Ga.	4,000,000
SINCLAIR LUMBER CO.	Lautinburg, N.C.	3,528,079
NETTLES LUMBER CO.	Arlington, Ala.	3,500,000
WEBB LUMBER CO.	Armiston, Ala.	3,000,000
JOHNSON SAWMILLING CO.	Sulphur, La.	3,000,000
BUNA LUMBER CO.	Buna, Texas	2,899,870
HILL-INZER LUMBER CO.	Amory, Miss.	2,674,640
W. F. BRADLEY LUMBER CO.	Roberta, Ga.	2,500,000
STEWART LUMBER CO.	Six Mile, S.C.	1,500,000
H. R. MOSLEY	Warrenton, N.C.	1,095,000
MORSE MILL CO.	Ola, Arkansas	540,000
FISHER BROTHERS LUMBER CO.	Tuscaloosa, Alabama	501,445
M. W. ARROWOOD	Rutherfordton, N.C.	485,000

Major Alaska Sawmills

FIRM NAME	LOCATION	LBR. FT. BM
KETCHIKAN SPRUCE MILLS	Ketchikan, Alaska	20,522,500
COLUMBIA LUMBER CO. OF ALASKA	Juneau, Alaska	11,585,777
PETERSBURG LUMBER CO.	Petersburg, Alaska	686,754

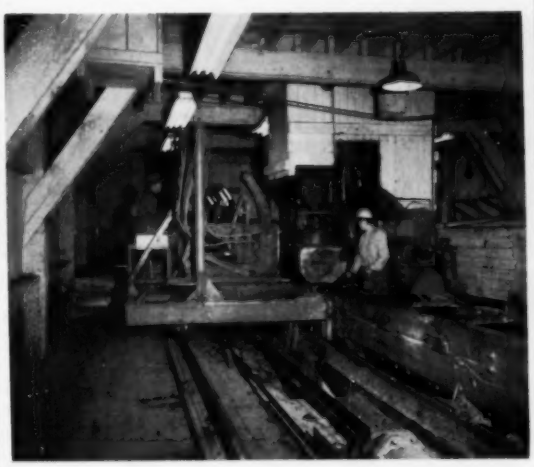
Major Sawmills–Lake States & Northeast

FIRM NAME	LOCATION	LBR. FT. BM
ATLANTIC LUMBER CORPORATION	Boston, Mass.	49,000,000
CONNER LAND & LUMBER CO.	Laona, Wis.	22,849,529
BROWN LUMBER CO.	Berlin, N.H.	19,438,077
MENOMINEE INDIAN MILLS	Neopit, Wis.	19,000,789
WILLIAM CHAMPLIN	Rochester, N.H.	17,200,000
ATLAS PLYWOOD CORP.	Boston, Mass.	17,000,000
HOMESTAKE MINING CO.	Spearfish, S.D.	16,650,000
CADILLAC SOO LUMBER CO.	Sault St. Marie, Mich.	15,662,052
KIMBERLY-CLARK OF MICHIGAN, INC.	Neenah, Wis.	15,000,000
ABBOTT-FOX LBR. CO.	Iron Mountain, Mich.	13,720,000
TIGERTON LUMBER CO.	Tigerton, Wis.	11,500,000
THURESON LUMBER CO.	Howell, Mich.	10,820,000
GREAT EASTERN LBR. CORP.	North Creek, N.Y.	10,000,000
GRAFTON LUMBER CORP.	Ashland, Maine	10,000,000
CRAFTON LUMBER CORP.	Bethel, Maine	4,000,000
WHITE RIVER TIMBER CO.	Park Falls, Wis.	9,859,251
AHONEN LUMBER CO.	Ironwood, Mich.	9,811,747
VULCAN CORPORATION	Donken, Mich.	9,700,000
GOODMAN LUMBER CO.	Goodman, Wis.	9,200,000
YAWKEY-BISSELL HARDWOOD FLOORING CO.	White Lake, Wis.	8,765,000
C. M. CHRISTENSEN COMPANY	Phelps, Wis.	7,882,000
ERICKSON HARDWOODS	Onalaska, Wis.	6,500,000
FISHER & YOUNG	Titusville, Pa.	5,684,196
COTTON-HANLON	Odessa, N.Y.	5,253,766
SCHNEIDER BROS.	Marquette, Mich.	4,765,056
C. B. NORTON & SON	Great Valley, N.Y.	4,580,000
N. T. FOX COMPANY INC.	Portland, Maine	4,513,000
BLOUT LUMBER CO.	Lacona, N.Y.	3,140,000
KNOKE LUMBER CO.	Appleton, Wis.	3,128,852
A. MASON & SONS INC.	Peru, N.Y.	3,100,000

Klamath Iron Works Carriage, Band Mill Shot Gun and Live Rolls With Yokes Shown

THE KLAMATH IRON WORKS CARRIAGE

The Klamath Iron Works Carriage, Band Mill, shot gun and live rolls with yokes shown gave the mill owner a trouble free operating season. The mill reported 3 minutes lost time from mechanical trouble for the 1955 season.



Klamath Iron Works equipment is used in the deck and is backed up by a Klamath Iron Works edger and overhead air lift trimmer.

Write for details and name of operator

Many Recent Installations

Write for list of users

We are Designers & Manufacturers of Sawmill Machinery

KLAMATH IRON WORKS

P. O. Box 129 **Phone 7721**

Klamath Falls, Oregon

Representatives:

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United States Machinery Co., New York, N. Y.
Washington Machinery & Supply, Spokane, Wash
Electric Power Equipment, Ltd., N. Vancouver, B. C.

KLAMATH IRON WORKS

5 Ways an American Sheet Metal Works DUST CONTROL SYSTEM will increase plant efficiency

1. ELIMINATE MANUAL CLEAN-UP.
2. EXPAND WORKING SPACE—by immediate removal of debris.
3. REDUCE FIRE HAZARD.
4. INCREASE LABOR PRODUCTIVITY—with healthier, happier workmen.
5. ELIMINATE EXTRA MAINTENANCE—caused by flying dust and debris.

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Blowers and Blower Systems • Conveyors and Conveyor Lining
Dust Collectors and Repair Parts • Dust Control Systems

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AMERICAN SHEET METAL WORKS, Inc.
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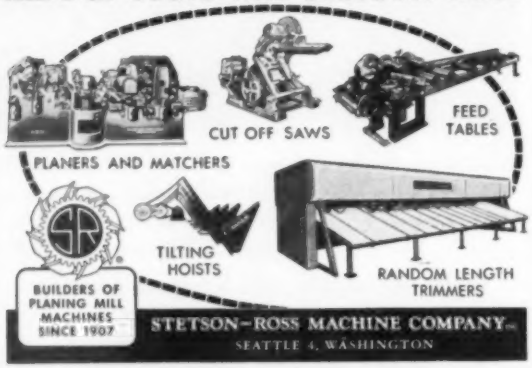
920 NE Glisan Portland, Oregon BE 2-0111

REDUCE COSTS with STETSON-ROSS



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SEATTLE 4, WASHINGTON

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GABRIEL BOILERS are adaptable to all types of fuel • A.S.M.E. code constructed • National board registered • Modern welded X-ray construction • 3-300 HP, 15-225 lbs. working pressures.

STEEL BOILER INSTITUTE CAPACITY RATED
(Your assurance of reserve power)

Boiler sizes for all industries. Write for name and address of your nearest Gabriel Boiler dealer.

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BUILDERS OF FINE BOILERS

FIRM NAME	LOCATION	LBR. FT. BM
OVAL LAKE DIS CORP.	Tupper Lake, N.Y.	3,018,762
THE JOHN MORGAN LUMBER CO.	Pittsfield, Pa.	3,000,000
HAROLD C. PETERSON LBR. CO.	Watersmeet, Mich.	2,500,000
J. C. CAMPBELL CO.	Duluth, Minn.	2,150,000
THE GREEN GLEN INC.	DuBois, Pa.	2,137,536
MICHIGAN POLE & TIE CO.	Newberry, Mich.	1,922,849
BEECHER FALLS MFG. CO.	Beecher Falls, Vt.	1,500,000
WAUSAU LBR. SALES CO.	Wausau, Wis.	1,000,000
WARD LUMBER CO.	Jay, N.Y.	230,000

Major Eastern Canada Sawmills

FIRM NAME	LOCATION	LBR. FT. BM
PRICE BROS. & CO. LTD.	Quebec, P.Q.	46,100,000
J J McFADDEN LUMBER CO.	Blind River, Ont.	31,098,368
THE PAS LUMBER CO.	The Pas, Man.	29,743,000
GEORGE GORDON & CO. LTD.	Cache Bay, Ont.	16,488,000

Timber Volume by Regions, 1953 As Reported in Timber Resource Review

Section and region	Sawtimber[1]			Growing Stock		
	Total	Soft-wood	Hard-wood	Total	Soft-wood	Hard-wood
	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.	Billion cu. ft.	Billion cu. ft.	Billion cu. ft.
North:						
New England	51	27	24	24	10	14
Midde Atlantic	74	13	61	34	5	29
Lake States	50	14	36	25	7	18
Central	83	4	79	25	1	24
Plains	8	1	7	3	[2]	3
Total	266	59	207	111	23	88
South:						
South Atlantic	107	51	56	34	15	19
Southeast	139	77	62	48	23	25
West Gulf	111	55	56	32	13	19
Total	357	183	174	114	51	63
West:						
Pacific Northwest:						
Douglas-fir subregion	595	577	18	113	107	6
Pine subregion	154	154	[2]	33	33	[2]
Total	749	731	18	146	140	6
California	360	354	6	67	64	3
Northern Rocky Mountain	167	166	1	43	43	[2]
Southern Rocky Mountain	69	66	3	18	16	2
Total	1,345	1,317	28	274	263	11
Continental United States	1,968	1,559	409	499	337	162
Coastal Alaska	89	89	[2]	18	18	[2]
All regions	2,057	1,648	409	517	355	162

[1]In addition to the live sawtimber volume, there are 37 billion board feet of sawtimber in salvable dead trees; of this total 34 billion board feet are in the West, 2 billion in the North, 1 billion in the South.
[2]Less than 0.5 billion board feet.
[3]Less than 0.5 billion cubic feet.

Ownership of Live Sawtimber, by Section, 1953

Ownership	All sections	North	South	West	Coastal Aaska
	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.
Private:					
Farm	308	102	144	62	—
Forest industry and other	772	132	178	462	[1]
Total	1,080	234	322	524	[1]
Pubic:					
National forest	766	13	23	647	83
Other Federal	135	4	8	117	6
State and local	76	15	4	57	—
Total	977	32	35	821	89
All ownerships	2,057	266	357	1,345	89

[1] Only 322,000 M bd. ft.

Hardboard, Particle-

ATTRACTIVE TV CABINET, die cut and bent to conform to desired small radii, made of Forest Fiber Products Co.'s ⅛-in. Standard Forest Hardboard, is one of the hardboard uses.

Board Industry Flourishes

Distinction now is needed between hardboard, particleboard, flakeboard

DYNAMIC PROGESS CONTINUES in the "pressed board" field. New processes are appearing, new plants have started production, existing plants expanded, fabrication facilities added, products developed with characteristics specially built-in for specific uses, and sales programs have gained momentum.

Until a few years ago "wood composition board" in this country was separated into two distinct sections—hardboard and insulation board. Not only did these have separate use applications but were distinctive in appearance, heft, strength, feel and function.

Progress in the manufacture of pressed boards, since expiration of basic original hardboard patents in about 1943, has brought terminology complications. H. C. L. Miller, president of Miller Hofft, Inc., states: (There is considerable confusion in terms and specifications. Insulating board, fiberboard, particleboard, and hard board are terms applied to a wide variety of products serving a multiplicity of uses. They have only this in common: the primary raw material is wood in the form of whole logs, logging or sawmill residues or cores, clippings, edgings, trims, sawdust and scrap from lumber and other woodworking operation."

The "hardboard" field has objectively established its identification with, and exclusive claims to, that name for board products produced of "interfelted lignocellulosic fibers consolidated under heat and pressure into a board characterized by a predominantly natural bond". As pointed out by Donald Linville, Hardboard Assoc. executive secretary, the term "hard board" was used by Wm. H. Mason over 30 years ago in conjunction with claims to basic patents of Masonite Presdwood.

LINVILLE ALSO CITES U. S. Forest Products Laboratory Report No. D1928, issued in 1952: "The term 'hardboard', originally coined by the Masonite Corp. of Laurel, Miss., has now become generic and describes a cellulosic fibrous product made in one of three ways (wet, semi-dry, or dry processes), having a specific gravity from 0.8 to 1.2 and surfaces either wire marked on one side or smooth on two sides."

"Hardboard", according to U. S. Tariff Commission report of March 1955, "is a term that has come to be pretty generally accepted in the language of commerce to identify a hard, dense board made from wood fiber interfelted and compressed under heat and pressure."

With minor exceptions the manufacturers of other types of "wood composition boards" seem to be as concerned about **not** having their product referred to as "hardboard" as are the hardboard producers themselves. There are so many variations—in raw materials processing, chemicals and production methods—in the various board products other than hardboard that standardization of nomenclature, except by trade names, still presents a problem.

One of the terms contributing to confusion in the pressed board field is "chip board" or "chipboard" a term used in the pulp and paper industry prior to the commercial manufacture of hardboard or particle board. The classified section of Lockwood's Directory (of the Paper & Allied Trades) lists 81 producers of "chip board" in its 1920 edition. Its 1956 edition lists 99 producers, consisting of such representative organizations as Container Corporation of America, Eagle Paper Mills, Inc., Fibreboard Products, Inc., Gaylord Container Corp., U. S. Gypsum Co., etc.

OF "CHIP BOARD", Websters New International Dictionary, Second Edition, unabridged, defines it as "a kind of pulpwood used for making paper

"REZWOOD" PARTICLEBOARD produced by Willamette Fiber & Chip Board, Inc., is displayed in the Co.'s office at Sweet Home, Ore. Rezwood is used extensively for interior, exteriors.

Oregon Summarizes Research

by
R. G. FRASHOUR

THE OREGON FOREST PRODUCTS Laboratory's work in hardboard has been of two types:

- Determining the physical properties and behavior of commercial hardboards.
- Studying variables that effect board properties.

Studies of the first type aid in establishing realistic test procedures and specifications for the hardboard industry. Published work has included studies of the effects of (1) specimen size and shape on water absorption; (2) machine head speed and test span on strength values; (3) relative humidity changes on board moisture content and dimensional stability.

Studies completed but not yet published include:

- Relationships of Specific Gravity and Flexural Properties of Commercial Hardboard.
- Effect of Cyclic Humidification on Dimensional Stability.
- Effect of Water Soaking and High Humidity on Dimensional Changes.

Studies of manufacturing variables that affect board properties began with early investigations on wet-formed hardboard that were of interest during the late forties when the hardboard industry of the Northwest was first established. This early work was directed to studies of resin contents, pressures, heat treatments, etc. that effect physical properties of wet-formed hardboard of Douglas fir.

WITH THE ADVENT OF dry-formed hardboard processes an expanded area of manufacture was opened. Hardboard production was no longer limited to regions with large volumes of available water and a means of process water disposal. Areas within the state without abundant water supply could now enter the field. Studies were made to determine the suitability of native species such as lodgepole pine, western juniper, and West Coast hemlock for hardboard.

In the dry-formed process of making hardboard the resin additive represents a considerable cost factor in contrast to the relatively low binder cost when using the wet-forming process. Later studies were initiated to determine the effect of resin percentages as a variable in the manufacture of dry-formed hardboard.

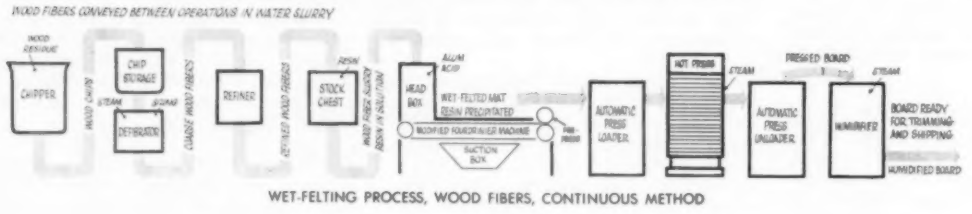
Particle board, a relative newcomer to wood utilization in the U. S. has expanded considerably. There are now six plants producing particle board in Oregon and Washington; four years ago there were none. In addition to the six producing plants there are four plants under construction that will be in production this year.

The Oregon Forest Products Laboratory was one of the first agencies to participate actively in studies for producing this type of board from western woods. Considerable assistance has been given to manufacturers in establishing particle board plants in the Northwest. Because of the high resin requirement for the manufacture of particle board the most efficient use of synthetic resin is of prime importance. A study was made to determine the most desirable method of applying a powdered resin and also the effect on board properties of varying amounts of this resin binder.

LABORATORY PROJECTS ARE often designed to determine the feasibility of producing a specific product. One such product was a low-density, paper-faced sheathing material made from coarse particles of ponderosa pine mill residue. Another product was made from finely divided particles compressed to high density for plastic laminates. A project now in progress involves the use of particle-type material for floor tile. Board plants designed to use only small volumes of raw material for specialty

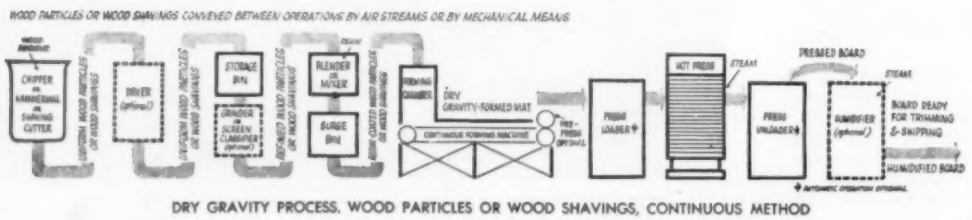
Mr. Frashour is in charge of the manufactured products section, Oregon Forest Products Laboratory, Corvallis, Oregon.

TYPICAL FLOW DIAGRAMS OF THREE MAT-FORMING PROCESSES



WET-FELTING PROCESS, WOOD FIBERS, CONTINUOUS METHOD

DRY OR SEMI-DRY AIR-FELTING PROCESS, WOOD FIBERS, CONTINUOUS METHOD



DRY GRAVITY PROCESS, WOOD PARTICLES OR WOOD SHAVINGS, CONTINUOUS METHOD

CHART COURTESY Pacific Power & Light Co., Portland, Ore., from publication "Wood Composition Boards", which contains complete description of board making processes currently in use.

products such as flooring tile would require low capital investment and would do much to encourage residue utilization at plants having limited capital or smaller residue volumes.

Another study resulted in construction of a liquid resin applicator for large wood particles. This apparatus involved the use of a spray tower to thoroughly coat air-suspended wood particles and also to achieve a separation of particle sizes.

Currently particle board usually is made in thicknesses of ¼ inch or more. Because of the end use it is desirable to maintain a close tolerance on final board thickness. The Laboratory has devised, and tested in industry application, a method of maintaining close thickness tolerance through simple automatic control. The thickness control device also controls the pressing cycle of the board to insure adequate bonding and curing pressures throughout the entire cycle.

IN RECENT MONTHS the lumber industy has shown increased interest in composition board production. Many questions directed to members of the Oregon Forest Products Laboratory staff are concerned with particle board. Because of the newness of this product the inquiries primarily are concerned with: possible uses, present specifications and testing procedures, future demand, economical plant capacity size, FHA acceptance of particle board, and production costs. From inquiries are certain to come more particle board plants in Oregon and Washington.

During the past eight years the quantity of mill residue used for all structural board products in the state of Oregon has increased from about 30,000 tons to 200,000 tons per year. Added product value in the industry based on estimated plant prices is about $20,000,000 per year. Although this increase in residue utilization is most encouraging, there are still available in Oregon over 6,000,000 tons per year of wood residue for expanding the manufacture of board products or pulp.

Board Industry Flourishes

(Continued from page 169)

boxes". The Dictionary of Business & Industry (1954) defines chip board as "a cheap grade of board, made on multi-cylinder machines from mixed waste papers".

In this section of The Lumberman's Yearbook, as a means of simplication, boards will be classified as (1) **Hardboard,** (2) **Particle Board** (made from wood particles), (3) **Flake Board** (constituted of wood in various other forms, but generally larger than particle size). Some products might conceivably be classified under more than one such classification.

Evidences of broadened, quickened interest in the pressed board field are no longer uncommon. The prospects are of concern to forest products manufacturers and timber owners who see possibilities of higher returns through more extensive wood utilization, to research and development groups seeking ways of developing better methods, processes and products, and to communities and industrial areas increasing the scope of their respective industrial horizons.

Pacific Power & Light Co., an investor-owned public utility firm with service areas in five Pacific Northwestern states, indicated its concern with the board field by an extensive survey of the subject, published in a 50-page book titled "Wood Composition Boards". This treatise, released in January 1956, outlines general characteristics, uses, manufacturing processes and other factors concerning the "board" field. That PP&L expended effort and expense to make this material available to its intended audience —prospective entrants into this and related phases of the industry—testifies to accelerated interests and future prospects.

• American interests, including Frost Snyder of Vancouver Plywood Co., are planning an integrated forest products facility in Mexico, including a modern plywood plant. Herman Simpson, Seattle, is consulting engineer for the project. Timber and plant site are located near the Mexican-Guatemalan border at Santa Margarita.

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Publishers' Paper Co.
Oregon, City
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Installation of
This installation consists of a 125 h.p. motor on the blower (using only 100 h.p.), a 5 h.p. motor on the CONVEYAIR ROTARY FEEDER (not shown), and 12" pipe.
Varying capacities, pipe sizes, etc. are specified suitably for individual requirements.
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A Special Report on Hardboard in 1955

by
DONALD LINVILLE

WHILE DOMESTIC HARDBOARD producers individually made giant strides in technology, promotion and sales in 1955, collectively they made equally significant progress through their industry trade association.

During 1955 the Hardboard Association:

- Added three new member companies.
- Offered evidence to help obtain the Tariff Commission's majority decision that hardboard is a wood product.
- Greatly increased its promotional and education programs; approved an industry emblem to be promoted by the Association and members, and developed plans for an industry film for television distribution.
- Assisted the General Service Administration in revising Federal Specification LLL-F-311, and helped develop a Commercial Standard for hardboard.
- Began an analysis of building codes affecting hardboard.

This is an impressive achievement for an association in its third full year of existence.

EDUCATION GREATEST NEED. Last year, through evidence offered by domestic producers, the United States Tariff Commission recognized by majority vote that hardboard is a wood product. It is believed the government ultimately will officially classify hardboard as wood for tariff purposes, rather than permit it to remain in its present erroneous "paper and books" classification. Proper understanding of hardboard by those who use it will be more difficult until our government accurately classifies it.

The need for education goes beyond government's recognition of the true characteristics of hardboard. The Hardboard Association is now making progress in establishing the difference in terminology between hardboard and other types of board (such as particle board, chipboard, etc.) referred to erroneously as hardboard, through an educational program. This program, designed to make well recognized definitions of hardboard generally known, will help bring about an end to the application of the term "hardboard" to products which do not fall within its definition.

TRENDS IN USE. In 1955, more than 1,500,000,000 sq. ft. of hardboard (converted to ⅛-inch basis) will have reached into virtually every industry in the country where specific advantages of this material are needed. This estimate includes only shipments of the eight Hardboard Association members (reporting for 1955). While imports from foreign countries are constantly increasing, that footage is not included in this estimate.

The most recent upsurge in hardboard acceptance has been in the new home construction market. Hardboard use has increased in the kitchen and throughout the interior of the house, but has also gone on the outside—for siding and fences, primarily.

Home remodeling, as well as new home construction, is becoming a major market for hardboard. The association and some of its member companies plan extensive publicity cooperation with Operation Home Improvement (jointly sponsored by the United States Department of Commerce and segments of the building industry) during 1956, to further build acceptance of hardboard in the home.

Perforated hardboard, though primarily popular because of its design, fulfills the need for ventilation where heat or moisture dissipation are factors; offers extra storage area in homes, since any wall of this material becomes a storage wall simply by using a variety of inexpensive hardware available such as hangers for clothing or brackets for shelves. Thus, the rapid popularity increase of this hardboard product has been phenomenal.

PERFORATED PANELS provide an orderly hanging arrangement suitable for items ranging from BB guns to wheelbarrows.

DONALD LINVILLE
Executive Secretary, Hardboard Assn.

Association Grows

During 1955, these additional manufacturers were added to the membership: Coos Bay Lumber Company, Weyerhaeuser Timber Company, and the Edward Hines Lumber Company through purchase of Oregon Lumber Company. Other members are Chapman Manufacturing Company; Forest Fiber Products Company; Masonite Corporation; Superwood Corporation and U. S. Gypsum Company.

Newly elected officers of the Hardboard Association are K. V. Hafner (vice president, Superwood), president; A. J. Watt (general merchandise manager, U. S. Gypsum), vice president; Paul Shoemaker (vice-president-sales, Masonite), treasurer; Arthur VanderSys (president, Chapman), secretary, and R. S. Spangler (assistant to vice president-sales, Masonite), Assistant Secretary.

U. S. Firms Designing And/Or Engineering Wood Composition Board Plants

AMERICAN DEFRIBATOR CO., Chrysler Bldg., 405 Lexington Ave., New York 17, N. Y.
AMERICAN MANUFACTURING CO., Tacoma 2, Wash.
BLAW-KNOX CO., Chemical Plants Div., 930 Fort Duquesne Blvd., Pittsburgh 30, Pa.
BRAMCO, INC., 626 5th Ave., New York City
CHIPCRAFT CORP., Morristown, Tenn.
COLUMBIA ENGINEERING CO., Crees Bldg., Corvallis, Ore.
THE DEAN CO., 666 Lake Shore Drive, Chicago, Ill.
ELMENDORF RESEARCH, INC., 322 W. Washington St., Chicago, Ill.
INDUSTRIAL DEVELOPMENT CORP., Tacoma, Wash.
JOHNSON & JOHNSON, Engineers & Architects, Chicago, Ill.
MILLER HOFFT, INC., Box 8718, Richmond 26, Va.
WILLIAM H. RAMBO, Portland, Ore.
RUST ENGINEERING CO., 575 Sixth Ave., Pittsburgh 19, Pa.
DONALD R. SEIP CO., 420 Lexington Ave., New York City
THOMPSON & HOLMBERG, Terminal Sales Bldg., Portland, Ore.
TIMBER ENGINEERING CO., 1319 18th St., N. W., Washington, D. C.
U. S. MACHINERY CORP., 90 Broad St., New York City
WASHINGTON IRON WKS., 1500 6th Ave., S., Seattle 4, Wash.
WOOD TREATING CHEMICALS CO., 5137 S.W. Ave., St. Louis, Mo.

Canadian Engineers

DR. L. L. SCHAEFER, Metropolitan Bldg., Vancouver, B.C.
S. C. ROONEY, Gen. Mgr., Columbia Engineering Co., 16 E. Hastings St., Vancouver, B.C.
SANDWELL & CO., Melville Street, Vancouver, B.C.

Canada Reports Board Research

by
J. H. JENKINS

RESEARCH INTO PRODUCTION and properties of various types of wallboard continues to be an important phase of the activities of the Ottawa and Vancouver Laboratories of the Forest Products Laboratories of Canada. Although a substantial part of this research work is aimed at the utilization of wood residues—particularly lower grades of this material—research findings are widely applicable.

During the past year work at the Ottawa Laboratory has been largely directed towards determination of possible alternatives to the use of synthetic resins in the manufacture of binderboards. At Vancouver investigations were mainly concerned with the evaluation of methods for determining the gluability of hardboard.

Ottawa Laboratory

All binderboards (also known as particle boards or chipboards) are now produced with synthetic resins—in most cases urea formaldehyde or phenolic resins. Largest cost item is the binder, in many cases amounting to as much as 60 per cent of total production costs. Any substantial reduction in binder costs would open new applications for these products.

Binderboard plant installations are within the economic reach of medium-sized operators, who have sufficient residue material for an all year operation. Greatly reduced production costs would attract a considerable number of lumber mills to this field.

Work during the past year, at the Ottawa Laboratory, F.P.L. of C. aiming at reducing binder costs has shown that certain barks, in combination with sulphite waste liquor, have possibilities.

EXPERIMENTAL BOARD CONTAINING approximately one third of Douglas fir or western red cedar bark and two thirds of black spruce sawdust of approximately 20 mesh were found to have the folowing properties:

- Boards from Douglas fir bark had a tensile strength of 614 p.s.i. and a water absorption of 9.9 per cent after 2 hours submersion.
- Boards from western red cedar bark had a tensile strength of 911 p.s.i. and a water absorption of 31.9 per cent after 2 hours submersion.

Both combinations contained, besides the sawdust and the ground bark, sulphite waste liquor (approximately 7 per cent of S.W.L. solids) and very small amounts of paraform as a condensing agent.

Controls made from the same sawdust bonded with 10 per cent and 5 per cent of phenolic resin gave values of 1247 p.s.i. tensile strength, and 27.7 per cent water absorption and 828 p.s.i. tensile, and 44.9 per cent water absorption, respectively. Results are considered sufficiently promising to justify further studies.

In the field of fibreboard, experiments have been carried out with barks of the 3 most important Eastern Canadian pulpwood species, i.e., black spruce, white spruce, and balsam fir. These barks, especially the inner barks, contain a considerable proportion of fibre. However, the material is very difficult to handle from a mechanical point of view. Pulps from the mixed barks (as obtained in the mills) are of little use for wallboard pro-

Mr. Jenkins is Chief, Forest Products Laboratories of Canada, a division of the Forestry Branch, Department of Northern Affairs and National Resources, Ottawa. This report covers work at both Ottawa and Vancouver laboratories.

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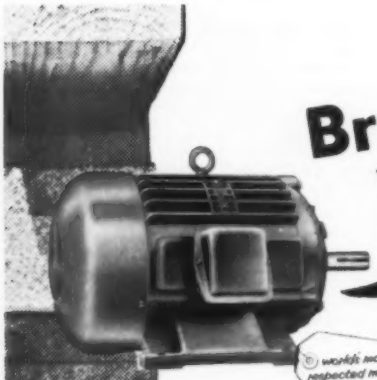

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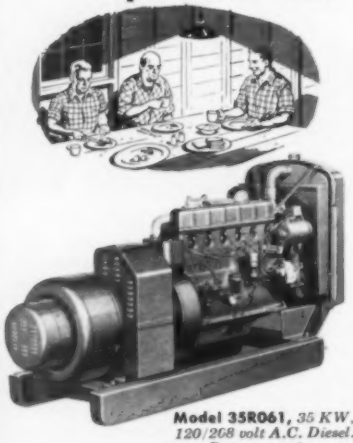

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duction due to extremely poor drainage properties.

WHEN DEFIBRED in a Sprout-Waldon experimental refiner, black spruce bark produces a pulp of a fairly high freeness; balsam fir bark pulp drains very slowly, and white spruce bark pulp is of intermediate freeness. Experiments with drying the barks at various temperatures have shown that 2 hours of heating at temperatures ranging from 100° to 150°C. is sufficient to substantially increase the freeness of pulps produced from these barks.

Balsam fir bark pulps, produced from undried bark, had a freeness of 160 ml. Canadian Standard; heating the bark for 2 hours at 100°C increased the freeness to 583 ml. C.S.; and heating at 150°C. increased the freeness to 795 ml. White spruce bark and black spruce bark also yielded pulps of increased freeness when heated under the above conditions.

These results indicate that pulp-mill barks, when separated according to species, heat treated and subsequently defibred, yield pulps of promising properties.

Vancouver Laboratory

Hardboard research completed at the Vancouver Laboratory during the past year included a project to demonstrate the usefulness of the Gluline-Cleavage Test[1] as a measure of the gluability of hardboard. The principles involved are discussed in a published article[2] which was prepared to justify the work hereunder described. The scope of this project is indicated by the wording of the statistical design:

"A factorial design was used employing the following:

Factor A: Seven glues, including penetrating (both water-soluble and organic-solvent-soluble) and non-penetrating types, acid and alkali glues, and glues both weaker and stronger than hardboards.

Factor B: High and low resin content hardboards produced by each of three processes; the wet flow, wet batch, and semi-dry.

Factor C: Two surfaces, namely, the fronts and the backs.

"Replication was provided for by including material from three sheets of each hardboard. The error degrees of freedom were further increased by testing three specimens per hard-

(Continued on next page)

[1] Northcott, P.L., 1952, The Development of the Gluline-Cleavage Test, Journal of the Forest Products Research Society, Vol. II, No. 5, Madison, Wisconsin, U.S.A.

[2] Northcott, P.L., 1955, Possibilities of the Gluline-Cleavage Test When Applied to Hardboard, Forest Products Journal, Vol. V, No. 1, Madison, Wisconsin, U.S.A.

Building Fiberboard Research At The U. S. Forest Products Laboratory

by
J. A. HALL

DR. J. A. HALL, Director of the Forest Products Laboratory, which is maintained at Madison, Wisc., by the Forest Service, U. S. Department of Agriculture, in cooperation with the U. of Wisc.

BARK MAY BECOME THE KEY to low-cost building board by providing economical resins and resin extenders.

As part of a continuous program of fundamental research on fibrous hardboards and particle boards, the U. S. Forest Products Laboratory at Madison, Wis., is studying bark and wood trannins to determine whether they can be used to produce a resin binder for particle board. Although the work is in preliminary stages, studies of the gelling characteristics of tannin solutions extracted from white spruce bark indicate that some types of tannin have definite possibilities for use as a resin or an extender of other resins.

Another phase of the Laboratory's research on particle boards is aimed at acquiring basic knowledge on processing variables. Manufacturers, for example, have found it difficult to achieve uniformity throughout the board. Variations in density or other properties affect the strength and dimensional stability within the board, and they cause difficulties when the board is combined with other materials, as when it is used as core stock for veneer or plastic overlays.

Previous work by the Laboratory has shown how the size and shape of the particles affect the properties of the board. The relationship between strength and resin content has also been established. Current research on processing variables is concerned with the acquisition of data on such fundamentals as the effect of moisture content of the particles, the relationship between resin content and moisture content and the relationship between resin content, moisture content, and freeness of fiber.

INFORMATION OBTAINED in this work will in the future be correlated with results of further research on particle size, molding pressures, and other variables in an attempt to find a method of detecting and relieving springback.

A third phase of the Laboratory's research is directed toward increased utilization of manufacturing residues and little-used species of wood.

A recent example of this work was the production of both dry- and wet-felted hardboards from dry planer-mill shavings of southern yellow pine. The project, which was conducted in cooperation with a lumber manufacturer, was unique in that the shavings were processed in a continuous screw press of the type used to extract oil from seeds and other materials. The boards had a pleasing appearance and sufficient strength for many uses where strength is not of paramount importance.

In current work on little-used species, hardboard of good strength and quality was made from red alder and slow-growth southern oak. Both of these woods are rapidly becoming problem species from the forest management standpoint. In some areas, for example, the alder is taking over sites that once grew more valuable timber, such as Douglas fir. The use of this species in hardboard might make it economically feasible to harvest much of the alder and reseed the sites with Douglas fir.

ONE OF THE OBJECTIVES of this research on little-used species is to determine the effect of pulp yield on the strength and properties of the boards. Other species evaluated to date include white oak, sand hickory, and soft and hard maples. The data on pulp yield indicate boards of optimum strength and stability are usually obtained from pulps in a yield range of 83 to 85 percent.

The production of building fiberboards is one of the fastest growing segments of the forest products industry. Perhaps more important, it offers an excellent opportunity to improve the management and utilization of our forests by providing a way of utilizing the thousands of tons of unused by-products that result from diverse harvesting and manufacturing processes.

With this thought in mind, the Laboratory will continue to investigate springback and other fundamental problems and to evaluate test methods and techniques. It is believed that the basic knowledge obtained in such studies will lead to the improvement of all processes and to the more effective use of the products.

(Continued from page 174)

Canada Reports Research

board sheet per treatment combination. The total number of specimens was 7 x 6 x 2 x 3 x 3 or 756 for each method of test; a total of 1512 specimens."

TWO METHODS OF TEST were compared, the Glueline-Cleavage Test and a cross-lapped tension-normal-to-the-surface method. This work has not been published but the conclusions are as follows:

"This research has demonstrated that, from the standpoint of efficiency, reproducibility, or accuracy, whichever expression best conveys the idea of truthfulness in recording bond quality, the Glueline-Cleavage Test is superior to the Tension-Normal Test."

In addition to this very desirable quality the method has several additional advantages, the most important of which is that the test specimen is the simplest possible; easier and cheaper to manufacture with accuracy.

Production of Hardwoods In Pacific Northwest

(As reported by the Northwest Hardwood Association, Seattle, Wash.)

• While no exact figures are available on hardwood production in Oregon, Washington and British Columbia, reports from a number of the larger producers indicate an annual total of more than 50-million board feet. In addition to those who have reported their production, other mills who have not yet reported are estimated to have an annual output which would bring the total for this region to about 65-million.

Of this estimated total, about 40-million are produced in Washington, 15-million in Oregon, and 10-million in British Columbia. It is possible, however, that a larger quantity than indicated is produced in Oregon and British Columbia, as production figures from those two areas are rather incomplete.

These figures are for lumber only. In addition, at least 130,000 cords of hardwood are used annually by pulp mills, and 1,300,000 lineal feet of hardwood poles are used annually by manufacturers of paper-roll plugs.

The species covered include alder, maple, cottonwood, ash, birch and oak. Alder predominates, with an estimated total of 33-million board feet; cottonwood, 20-million; maple, 11-million; birch, ash and oak, 1,000,000.

(Ed. Note: The association is seeking more data on hardwood production and asks the trade to assist in this search.)

Composition Board Chemicals

by
EARL T. McCARTHY

EARL T. McCARTHY, sales manager, Special Products Dept., American Marietta Co., Seattle, Wash., makers of chemicals for board.

CHEMICALS ARE USED in the production of almost every type of hardboard, particle board and other pressed wood composition boards. They improve physical properties (strength, machinability and dimensional stability). Board production has increased at a rapid rate; however the growth rate of chemicals used has not been as great due to technological advances in board manufacture and better chemicals being provided.

Chemicals for binding, sizing, tempering, and other treatments of hardboard amount to around 30,000 tons annually. Particle, and other boards, require approximately 6,000 tons. The two main groups of chemicals used by the composition board industry are: **synthetic resins** for binding and **drying oils** for tempering.

Binders Resin binders were unnecessary in the hardboard originated by W. H. Mason over 30 years ago; satisfactory strength was obtained during hot pressing by reformation of lignin bonds. In 1947 Chapman Manufacturing Company started production of hardboard by a new process using, as the binder, approximately 3 percent phenolic resin. Since then the number of plants and processes for producing hardboard has expanded tremendously, increasing the pressure for improved resins and their more efficient use.

Depending upon the particular wood species, the production process used, and many other factors, the amount of resin required varies greatly with a maximum now of 3 percent. Resins tailor-made for individual board processes have accounted for a halving of the amount of resin originally required by most hardboard manufacturers. Resin is not an essential ingredient. However, without it increased refining and a lower production rate usually more than offsets cost of the resin.

Early developments of particle boards took place in Europe where mainly urea resins were used. The U. S. started with their processes which required 8 - 10 percent resin. There was an initial trend to incorporate extenders such as wheat flour. Recently improvements of resins have led to elimination of extenders and a reduction of resin content generally used to 3 - 6 percent. Powdered urea resins were originally used, but since it is possible to obtain better distribution with a liquid resin and equal board properties for a lower cost, there are now only isolated cases where powdered resins are used.

Liquid phenolic resin permits making particle boards with highly weather resistant properties at little or no additional cost. Until recently catalysts were used in all particle boards bound with urea resins. The catalysts, generaly acidic salts such as ammonium chloride and certain phosphates and sulfates, were used at the rate of approximately 3 percent based on the resin solids. Progressively, it has been possible to eliminate or reduce these catalysts with most wood species, hence further reducing the percentage of chemicals used in particle board production.

Sizing Agents A few years ago emulsions of paraffin wax generally were used for hardboard dimensional stability improvement. Now petrolatum, a mix of high melting hydrocarbons and oil, is employed in almost every mill. Reasons for this change were many. Expense of emulsifying paraffin wax is high as compared with heated storage necessary for petrolatum. In dry or semi-dry process hardboard use of petrolatum eliminates extra moisture being added.

Wax emulsions are usually added to fibers or fiber slurry whereas petrolatum is normally added to chips which reduces power requirements for refining. Alum is usually required to achieve good retention of size in wet process hardboard. Too much causes a reduction in strength, so a combination of alum and sulphuric acid is used. With the dry and semi-dry processes alum is desirable only with certain wood species which have low acid contents.

Sizes are employed in particle board when high moisture stability is needed; usually 1 - 2 percent is sufficient. For example, 1 percent will lower the two hour water soak values on thickness swelling from 15 to 5 percent and on water absorption from 70 to 10 percent.

Tempering Materials Almost half of all hardboard produced in this country is tempered to improve moisture stability, strength, and other properties. Inexpensive blends of drying oils such as tall, linseed, and soy, and petroleum resins are employed. Market conditions often determine which one will find the greatest use at a particular time. Three to five percent is applied by impregnation after which the hardboard is baked to diffuse and dry the oils. It has not been necessary to temper other wood composition boards.

Miscellaneous Chemicals Other chemicals are used by the industry for special surface treatments, foam control, water treatments, and many other purposes but the overall amount is not large.

Future There will be:

- More effective binders for wood composition board.
- Chemicals for greater improvement of fire resistance and dimensional stability.
- Chemicals for surface improvement; for eliminating pits, uneven density and cockles; and for improving paintability, alkali resistance and gluing properties.

Some of these chemicals may be derived from wood in other operations.

One recent development is an overlay of paper, resin, and other chemicals. It is applied during regular pressing and tremendously improves surface and other properties of most types of boards. Although surface resin content is above normal the total chemicals used may be less in the future. This further separates the growth curves of wood composition board and the chemicals used by this industry.

Wherever composition board is used, for house construction, store equipment, furniture, TV cabinets or any one of thousands of other uses, chemicals will play a part in improving board properties and reducing in costs the pressed wood composition board industry.

Value of Forestry Production of British Columbia, Yrs. 1921-1954

1921...	$64,970,000	1938...	$ 67,122,000
1922...	59,477,000	1939...	88,221,000
1923...	86,674,000	1940...	102,804,000
1924...	80,702,000	1941...	119,920,000
1925...	81,941,000	1942...	124,720,000
1926...	84,802,000	1943...	118,434,000
1927...	83,087,000	1944...	146,611,000
1928...	93,787,000	1945...	147,655,000
1929...	93,301,000	1946...	173,471,370
1930...	69,737,000	1947...	282,288,388
1931...	44,447,000	1948...	363,786,000
1932...	35,157,000	1949...	331,589,549
1933...	39,155,000	1950...	468,371,142
1934...	45,461,000	1951...	504,807,930
1935...	56,941,000	1952...	496,507,550
1936...	72,010,000	1953...	512,288,616
1937...	80,872,000	1954...	523,450,000*

*Estimated

Source: Annual Reports of the Forest Service, Department of Lands and Forests, Victoria, B.C.

Hardboard, Particle-

Hardboard Popularity Rises

by
K. V. HAFNER

K. V. HAFNER, President, Hardboard Association and vice-president of Superwood Corporation.

NEW WAYS TO FINISH the surface of hardboard have developed as rapidly as the popularity of the material itself. Improved fabricating processes too have helped bring about the tremendous growth in hardboard use.

Hardboard fabricating advancements are increasing tool life and cutting down waste lost in saw kerps. Thinner rim saw blades along with harder grades of carbide for tooth inserts have been introduced. The combined results make for not only longer tool life but also increased utilization of material.

Cutting score lines in the surface of hardboard (generally done to obtain a decorative effect) with abrasive discs is a recent innovation used by a case goods manufacturer. While removing material, the abrasive disc cuts a uniform, chip-free score line and at the same time burnishes it to a finished smoothness.

A method of fastening cleats to hardboard and at the same time applying pressure to the glue bond is, in some cases, helping to increase production. Glue is spread on the cleat which in turn is nailed to the hardboard by driving the nail through the wood and into the hardboard. Since the nail does not penetrate through as far as the hardboard's finished surface, a smooth finish can be obtained. Glue-nailing thus assures a tight joint and a positive glue bond, eliminating time lost in clamping.

AN ALL-HARDBOARD DRAWER front is a recent development in the furniture industry. Made of laminated hardboard, it has been tested and found to be sturdy and workable, with better finishing qualities—at lower cost.

In the tileboard field, a copper-colored finish is gaining recognition. Using copper as a component of the formulation, this surface has a glossy depth that resists chipping and moisture. Following modern decorator trends, this paneling makes an especially attractive kitchen.

New top-coat finishes now being used on hardboard are resistant to nail polish, fruit acids, alcohol and heat marring. These are gaining widespread acceptance in the medium to low-priced furniture manufacturing fields.

The use of hot lacquers is decreasing the amount of finishing time and increasing the thickness of a single finish coat on hardboard.

A PRE-FINISHED WOOD-grained panel for industrial users will soon be marketed. It will be possible to fabricate furniture directly from the finished panels.

The continuous offset printing process, widely used in the television cabinet industry, is gaining wider acceptance in the furniture manufacturing field. Cylindrical etched rolls are used to transfer authentic wood-grain patterns and other designs to a gelatin or rubber roll which in turn prints the design directly to the ground-coated hardboard surface.

Continuous offset printing machines are available with either horizontal rolls for printing flat sheets of hardboard or vertical rolls for printing assembled hardboard cabinets.

These technological improvements and others underway, together with the increased tempo of individual company and Hardboard Association educational programs will inevitably spell out a bright future for the industry.

THE STANFORD RESEARCH Institute has made available probably the most accurate information concerning the hardboard industry outside of the Hardboard Association itself. Its prediction of total hardboard production, made in 1952 for 1960 had almost been achieved by 1955. The Institute's predictions for total hardboard production were:

(Year)	(Total Consumption* **)
1952	1.0
1960	1.6
1965	2.0
1970	2.5
1975	3.0

(* ⅛-inch basis)
(** Billions of sq. ft.)

TONGUE & GROOVE paneling, such as this manufactured by Forest Fiber Products Co., appeals to "Do-It-Yourself" fans.

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New Pressed Board Developments Are Reviewed

by
ARMIN ELMENDORF

ARMIN ELMENDORF, President of Elmendorf Research, Inc., Chicago, Illinois. (Photo courtesy Fabian Bachrach.)

ON THE BASIS of a pilot plant constructed two years ago in which we were successful in manufacturing a new type of hardwood veneer board, two factories were designed and constructed and completed in 1955. First carloads of commercial production left the factory at South Bend, Washington in the fall of 1955. The product has been introduced to the building trade as Nu-Ply.

Nu-Ply consists of one-piece birch and ash veneer faces bonded together with fibers derived from soft-wood to produce veneered hardboard in one pressing. The panels are ¼" thick and 4' x 8' in size.

Nu-Ply is a new type of veneered panel which is similar to plywood in that it is made of genuine hardwood veneer, and similar to hardboard in its hardness and dimensional stability. The core is made of natural, long length fibers of wood impregnated with water-proof resin.

The second plant to manufacture Nu-Ply is nearing completion. It is being built at Bemidji, Minnesota and production of Nu-Ply is expected to start there in the Spring of 1956. The additional production will provide sufficient Nu-Ply so that industrial, as well as, architectural markets can be served. The product will also be manufactured in other thicknesses suitable for die-cutting and punching.

NU-PLY WILL ALSO be available as a superior punch board with genuine hardwood veneer faces. It combines the beauty of one-piece veneer with the versatility and strength of hardboard. The plants mentioned are producing Nu-Ply under exclusive area manufacturing license arrangements under Elmendorf Research patents.

Another Elmendorf product, now fully developed in the laboratory and about to be manufactured on a pilot scale, has the density and strength of Douglas fir plywood. It is anticipated that its manufacturing cost will be below that of plywood and that it will be used primarily as sub-flooring and sheathing. It eliminates such problems of plywood manufacture as grain raising, knots and knot-holes. All panels will have the same uniform structure. The raw material will be sawmill residues, slash now left in the woods, and low-grade logs not suitable for conversion into plywood or lumber. Semi-commercial manufacture of this new composition board probably will be under way before the end of 1956. The product will then be ready for licensing to lumber manufacturers.

Research In Pressed Boards

by
FRED E. DICKINSON

FRED E. DICKINSON Director, Forest Products Laboratory, University of Calif.

A FOREST PRODUCTS LABORATORY at the University of California was discussed several times in the past three or four decades. World War II pointed out to the industry the necessity of a stepped up program in the field of forest products research. During and following the war there was an increased demand by the California forest products industry for a laboratory located within the State. This culminated in an appropriation of a million dollars by the State Legislature; the money was to be used by the University of California to build and equip a laboratory on the Berkeley campus. The building was completed in the spring of 1955. At the present time the Laboratory is being staffed and equipped.

The Laboratory building is of wood construction untilizing a number of interesting architectural features. There is approximately 25,000 feet of floor space, all on one floor, devoted to laboratories, pilot plant area, shop area, storage, and staff and administration offices. Additional buildings house a dry kiln, a sawmill, and provide storage for bulk chemicals and specimen material.

Administrative-wise the Laboratory is a part of the School of Forestry on the Berkeley campus. The Director is responsible directly to the Dean of the School of Forestry. While the facilities of the Laboratory will be used for graduate instruction, the principal purpose is that of research in the field of forest products.

There are now two research divisions, Forest Products Chemistry and Timber Physics and Mechanics. The Forest Products Chemistry Division will confine its activities to work in wood extractives, chemical treatments of wood, fiber products, finishing and preservation, etc. Research in the Timber Physics and Mechanics Division will be in physical and mechanical properties of wood, wood drying, wood machining, gluing, structural uses of wood, and wood waste utilization in such products as particle and chip board.

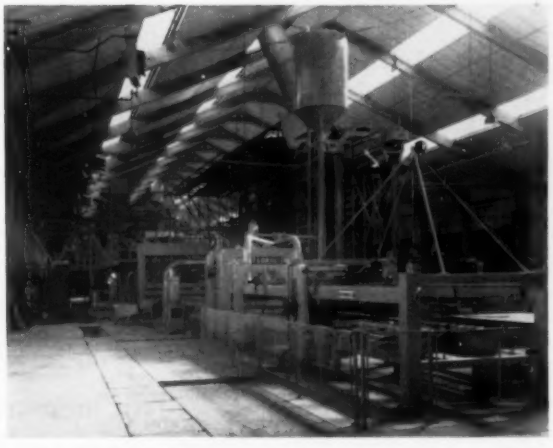
WORK ON PRESSED BOARDS will be carried on in both divisions—fiber boards being investigated in the Forest Products Chemistry Division while the Timber Physics and Mechanics Division will be responsible for research on those types of boards in which the wood components have not been reduced to the fiber state. Personnel from both divisions will cooperate on problems of mutual interest as, for example, techiques for evaluation of properties of boards.

The research effort will follow several lines. These are:

- Evaluation of California species, both conifers and hardwoods, for boards of the several types.
- Improvement of properties through study and modification of components and processing techniques.
- Modification and improvement of properties in finished boards through such techniques as surface covering and coatings.
- Investigation of problems involved in the utilization of boards including machining, fastening, and veneering.

Considerable equipment to carry on this work now is being installed or is on order. Some of the items include a chipper, digester, hammer mill, Asplund defibrator, Sprout-Waldron defibrator, hot presses, forming equipment, and mechanical and physical properties testing equipment. As the Laboratory is equipped with several controlled temperature humidity rooms and a weather-ometer, the evaluation of board properties can be made under a number of exacting conditions.

One of the important problems facing the wood industry in California today is that of residue utilization. Both the primary and secondary wood industry is interested in products and techniques which will help solve this problem. The Laboratory can perform a real service in carrying on research in the general area of pressed boards. Consequently such research will have an important place in the research program.



GOLD LABEL WEYROC is made at this plant in Annan, Dumfriesshire, Scotland. Left: hoppers controlling resin-mixed chip flow to the spreader. Foreground, caul-plate handling system. Shown in photo at right: the hot press, near the end of production line.

Plant Utilizes Thinnings

A NEW CHIPBOARD PRODUCT, Gold Laber "Weyroc", is now being made at Annan, Dumfriesshire, Scotland, by The Airscrew Co. & Jicwood, Ltd. This plant is the first of its kind in Britain and said to be one of the most modern in the world.

For a decade, the chipboard has been made by the same firm and marketed as Weyroc. Until Gold Label Weyroc appeared, chipboard was usually made of industrial wood residues.

Gold Label Weyroc is of a graded density construction, stiffer and stronger than the previous type of Weyroc and also of lower density and with a finely textured surface. These qualities produce a board of very wide appeal, with furniture-making probably its most important use.

Conceived, designed and erected in two years, and costing several million dollars, the Annan plant has an initial production rate of more than 10,000 tons a year. Annan was chosen because there is a ready supply of coniferous timber close by—"forest thinnings".

In the process, to a considerable extent automatically controlled, the operations between raw material and finished Weyroc are in a continuous unobstructed flow-line under an 85-foot span roof.

THE FIRST PROCESS IS chipping. The chips are sifted, dried and mixed with resin. On the spreader caul-plates—the "trays" in which Weyroc boards are formed—are introduced on a conveyor. The first operation lays the "lower" surface of fine chips, next the coarser core chips are spread and, finally, the "upper" surface of fine chips. Each time, a correctly weighed resin-and-chip mix is poured on to the caul-plate and automatically graded.

Automatically, the "mattress" so formed is fed into the pre-press where it is partially consolidated, ejected, trimmed and passed to the final press-loader. This is a 15-daylight steam-heated hydraulic machine operating on a curing cycle which allows a production rate of about one ¾" board a minute. Automatically loaded and unloaded, at its exit the caul-plates are removed automatically from the formed boards and conveyed back through a cooling station to the spreader. Formed boards are aged for a week then trimmed and sanded on both sides.

Greater stiffness, dimensional stability and fine smooth surface, and the close tolerances to which it can be made, are the most valuable features of graded density board. Low density permits longer tool-life; the surface is specially suited to high-grade veneering. The board has a high resistance to water-absorption, achieved by use of special additives in the mix.

Danish "Novopan" Board Finds Increased Markets

Reported from London
By P. O. BISHOP, Bakelite Ltd.

• A Danish laminated board for making structural, insulating and fire-retarding partitions and divisions in ships, has now been approved by the Ministry of Transport and Civil Aviation for use in British passenger vessels. Known as Novopan, the material has already been used extensively in ships built abroad but it has not previously been available in this country. Agents for the British shipbuilding industry are Bakelite, Ltd., London.

There are two types of Novopan available, each in a number of standard-sized sheets, and cut-size panels, up to a maximum of 8 feet by 3 feet, and in thickness ranging from 13 to 40 m.m.:

Novopan 'B' is a laminated board comprising a core of synthetic resin-bonded wood fibres and layers of asbestos, surfaced each side with two cross-banded hardwood veneers.

Novopan 'FX' is a similar material but without the asbestos. It possesses some fire-retarding properties and shows satisfactory integrity and insulation figures when tested to the International Standard Fire Test conditions.

Novopan can be supplied with a hardwood veneer, finished ready for painting, polishing or veneering or can be supplied surfaced with Warerite laminated plastics veneers, also manufactured by Bakelite Ltd.

The Ministry of Transport has approved Novopan for use either as a 'B' class division or a fire-retarding division. It can now be used in the following types of ships:

• All passenger vessels built in this country for British or foreign owners which employ Method II Fire Protection System (sprinkler).

• Passenger vessels built in this country for most Continental owners in which Method III Fire Protection system is applied.

• All passenger vessels, carrying not more than 100 passengers, which are built in this country for British owners, and incorporating Method III.

• All cargo vessels, including tankers.

A Report on Particle Geometry and Processing

by
H. C. L. MILLER

A REAL NEED EXISTS for better general understanding and accepted definitions of the terms "insulating board", "hardboard", "fibre-board" and "particle board". Some progress has been made but further clarification and customer understanding is clearly necessary. This statement is concerned with particle board—defined as medium density, dry formed and resin bound.

Development work by Miller Hofft, Inc. in this field during recent years falls into two broad categories—the first concerned with particle geometry and its effect on the costs and properties of the product and the second with the actual processing machinery for producing the commercial product.

In particle geometry, an extensive program has been conducted to determine the properties of boards made from three basic types—fibres, splinters and shavings. The following table indicates the relative quality of the types of particles as determined in our experimental plant. All of the particles were prepared and the panels manufactured at equal density under the same conditions in our own equipment. Assuming a given density and resin treatment wherein the splinter type of aggregate will provide a modulus of rupture of 2000 p.s.i., the following relative physical characteristics may be expected:

	Splinter	Fiber	Planer Shaving	Manufactured Shavings or Flakes
Modulus of Rupture—p.s.i.	2,000	3,200	1,800	4,200
Modulus of Elasticity—p.s.i.	300,000	210,000	330,000	620,000
Hardness	1,300	1,100	1,000	1,400
Screw Holding Power—Using a ¾" No. 10 Screw with ⅛" Pilot Hole	330	260	250	330
Surface and Edge Smoothness Values in Percentage of Best	80	100	90	90

THE HOMOGENEOUS FLAKE type board shows superior properties in practically all respects. Surface appearance, smoothness and edge tightness are particularly good and strength is excellent. Flake boards may be produced at lower densities and resin treatments to give properties equal to splinter boards with consequent lower production costs.

Development of the Miller Hofft particle board process and equipment has emphasized continuous, fully mechanized and automatic operation plus a flexibility which allows the product to be tailor-made to the required end uses. Particle size and geometry, resin treatment, density, thickness and panel uniformity are under direct control of the operator at all times. Fine surface or sandwich type boards may be produced in the single forming and pressing operation.

The Miller Hofft particle board process is available on a royalty-free license basis. After laboratory and full scale experimental plant tests, the process and equipment are offered on an undivided responsibility contract with guarantees of capacity and product quality.

Mr. Miller is president of Miller Hofft, Inc., Richmond, Virginia.

TABLE TOPS produced by The Lane Co., Altavista, Virginia, using "Lanewood" particle core board which is grooved at edges to accommodate the tongue of the finish moulding.

SHREDDING MILL BY-product wood with Jeffrey hammer hog for making into particle board. Residues from sawmills and similar plants are raw material in this process.

Great Britain Shows Promise In Board Field

• The production of reconstituted wood boards holds promise for an expanding forest products industry in Great Britain. Utilizing forest thinnings for making hardboards and chipboards may sustain an industry.

The Earl of Radnor, Forestry Commission chairman, says this body has formed 450 forests to produce needed wood. Some of these are sufficiently developed to the extent they now yield timber large enough to produce small dimension lumber. Thinnings from these and private woodlands are considered as one of the most important aspects of forestry and wood products industry in Great Britain.

P. I. M. Board Co., Ltd., recently started construction of a new hardboard plant at Millboard Works, Sunbury-on-Thames, which will produce hardboard wholly of wood obtained as softwood thinnings. The plant is scheduled for production start-up this spring.

Airscrew Co. & Jicwood, Ltd., which reportedly had the first factory in G. B. which manufactured chipboard from forest thinnings, has announced plans for constructing a new plant at Annan, Scotland. It will be located to conveniently draw its raw product wood from the Scottish forests.

This plant is said to be the nearest approach to date to a fully automatic method for converting coniferous thinnings into chipboard. Covering 46,000 sq. ft., the factory bases its production on continuous flow methods.

Another organization, British Plimber, Ltd., plans building a new plant at Rainham, Essex, on the principle of complete automatic processing control. Roland Williams, chairman of the firm, believes chipboard has an important future as far as his country is concerned; furthermore, he feels there are still a large number of "untapped points of consumption".

Dage Brunow

'55 Finn Hardboard Output Higher, But Profits Lag

Reported From Kotka, Finland By DAGE BRUNOW

• The year 1955 did not show any spectacular developments in the hardboard industry in Finland. Home consumption increased by 15 percent, chiefly the result of continuous active promotion by the advisory bureau maintained jointly by the competing mills. But the mills could not work to full capacity, chiefly due to the keen competition the export encountered on the Continental markets.

Home production on the Continent was increased; Finland's geographical position is a great handicap transportation-wise. Rail transport is out, and sea freights are naturally higher than from Sweden and Norway. But exports were maintained at the previous level of about 37,000 metric tons. The U. S. A. figure dropped again, but the loss there and on the Continent was made up by increased quantities going overseas, particularly to the East.

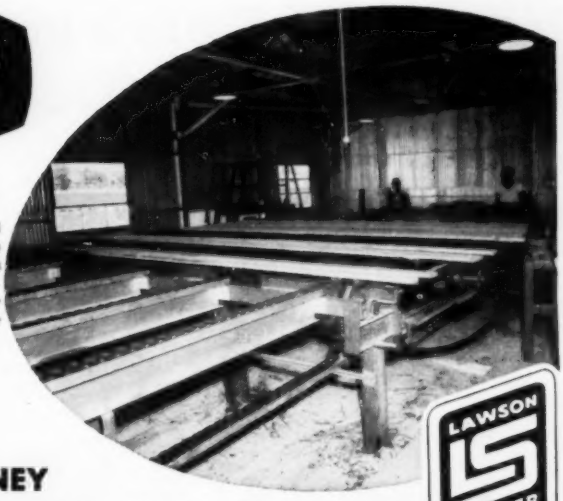
No new plants have been erected, but production was increased by 12 percent and reached about 70,000 metric tons. It was the first time more hardboard was produced than softboard, remarkable because Finland has the biggest pro capita consumption of softboard in the world (31 sq. ft. per annum).

Finland's Hardboard Exports, Metric Tons

	1953	1954	1955
Europe	19,725	26,280	23,846
U.S.A.	4,917	3,094	2,174
Other overseas	3,215	8,308	11,848
	27,857	37,682	37,863

Despite the fact that production in 1955 compares favorably with 1954, economic returns during 1955 were disappointing, due to lowered prices and higher freight rates.

Lawson LUMBER STACKER



THIS INSTALLATION

—is at Keltys, Texas and is for the big Angelina County Lumber Company's new, high efficiency mill. It handles lumber direct from the green lumber conveyor chain.

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You can cut your lumber stacking cost to a new low by installing a Lawson Stacker. In scores of mills they are saving hundreds of dollars on labor cost each year—and what's more, they are doing the job better; spacing for quicker and better drying and saving much loss due to downgrading from warpage. These ruggedly built stackers handle all kinds of lumber; random widths, lengths and thicknesses. You ought to have one for your mill. We'll gladly send more facts.

LAWSON STACKER CO., 1571 THOMAS AVE., MEMPHIS, TENN.

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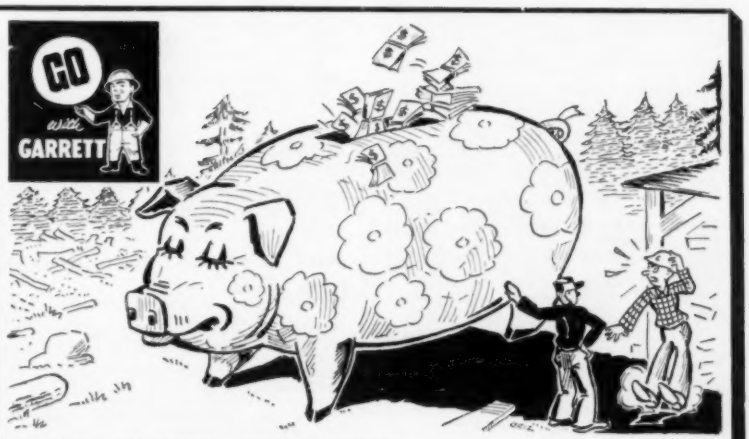

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Garrett Arches are lower in first cost and take less upkeep. Their lighter construction permits a bigger payload on every trip. Write for Catalog C.

GARRETT DISTRIBUTORS, 800 Stevenson Ave., Enumclaw, Wash.

Hardboard, Particleboard, Flakeboard Plant Directory

ABITIBI POWER & PAPER, CO., LTD., Alpena, Mich.
HARDBOARD & INSULATION BOARD
Plant of 250-ton daily capacity planned for start-up in late 1957. Estimated per day production: hardboard 200,000 sq. ft. 1/8-in. basis, insulation board 500,000 sq. ft. 1/2-in. basis.

ANACORTES VENEER CO., Anacortes, Wash.
HARDBOARD
*PRODUCTION: 1955—28.0, 1956 (est.)—28.0
PERSONNEL: Pres. Earl Cheldelin, Sls. Mgr. T. L. Bentley, Gen. Mgr. Gus N. Arneson, Supt. Arthur C. Carlson.
PROCESS: semi-dry plant start-up 1952
PANEL SIZE: 4x8 ft., 10-opening press
THICKNESSES: 1/8, 3/16, 14-in.
RAW MATERIALS: D fir and hemlock chips, molten wax, phenolic resin
SPEC. GRAVITY: 1.02 to 1.05
COLOR: light brown
TRADE NAMES: Armorbord
SPECIALTIES: overlay, peg board.

BERKLINE CORP., Morristown, Tenn.
PARTICLE BOARD
PRODUCTION: 2,400,000 sq. ft./yr. capacity
PERSONNEL: Mfg. Lester Popkin
PROCESS: Chipcraft; horizontal extrusion (24-in.); plant start-up 1953
RAW MATERIAL: Oak
USES: Overlaid table tops, wardrobe panels, etc.—all but 5% of output used by firm.

CANADIAN FOREST PRODUCTS, Box 1040, New Westminster, B. C.

PACIFIC VENEER & PLYWOOD DIV.
HARDBOARD
*PRODUCTION: 1955-55.0
PERSONNEL: Pres. J. G. Prentice, Gen. Sls. Mgr. W. E. Burns, Gen. Supt. D. M. Zilm, Hdbd. Supt. G. Burgon.
PROCESS: Asplund-Chapman; plant start-up 1948
PANEL SIZE: 4x8 and 4x4 ft.; 100% to full-size panels.
THICKNESS: 1/8, 3/16, 1/4 in.
RAW MATERIALS: D fir chips
TRADE NAMES: PV Hardboard, PV Square-Tex, PV Plank Board, PV Aero Board
SPECIALTIES: Plank Board, Square-Tex, Aero Board. Boards are tempered and kraft packaged for shipment.

CASCADES PLYWOOD CORP., Lebanon, Oregon
PARTICLE BOARD
*PRODUCTION: Estimated rated capacity 20.0
PERSONNEL: Pres. Chas. W. Fox, V. Pres. B. V. Hancock, Tech. Dir. J. R. Stillinger
PROCESS: Own; dry, continuous; plant start-up 1955
PANEL SIZE: 4x8-ft., 20-opening press
THICKNESSES: †NA
RAW MATERIALS: By-product wood (chipped &/or hammermilled), resin, sizing
SPEC. GRAVITY: NA
COLOR: Light
TRADE NAMES: Lebanex
USES: NA
CHARACTERISTICS: NA

CAVALIER CORP., Chattanooga 2, Tenn.
PARTICLE BOARD
*PRODUCTION: 1955—10.5, 1956 (est.) 24.0
PERSONNEL: Pres. Joseph H. Lane, Gen. Mgr. M. W. Moore, Supt. S. D. Weber, Sls. Mgr. T. R. Loder.
PROCESS: Miller Hofft enaineering; 54x100-in. press; plant start-up 1953
PANEL SIZE: 4x8-ft., 36% to cut-up sizes
THICKNESSES: 5/8, 7/8-in.
RAW MATERIALS: cabinet hardwoods, chips, urea resins
SPEC. GRAVITY: 0.60 to 0.65
TRADE NAMES: Lianabond
USES: furniture, 100%

CHAPMAN MANUFACTURING CO., Corvallis, Ore. (P. O. Box 651)
HARDBOARD
*PRODUCTION: 1955—24.0, 1956 (est.) 27.0
PERSONNEL: Pres. Robert Beaupre, V. Pres. & Gen. Mgr. Arthur Vander Sys, Supt. Hugo M. Schmidt, Tech. Dir. K. G. Borchgrevink, Asst. Supt. Earl L. Chapman.
PROCESS: Chapman (wet batch); plant start-up 1946
PANEL SIZE: 4x8, 4x4; 10% to cut-up sizes
THICKNESSES: 1/10, 1/8, 3/16, 1/4
RAW MATERIALS: D fir chips, pheonolic resins, waxes, acid-alum.
SPEC. GRAVITY: .86 to 1.05
COLOR: Natural D fir
USES: Building constr. 75% (interior 80%, exterior 20%), furniture 17%, industrial 8%
CHARACTERISTICS: Color, workability, smooth surface, puncture resistant
SPECIALTIES: Rib Tex (striated), Corru Tex (corrugated), Plankette ("planked" panels), Tile Pak (striated squares), Handyman Panels (sales rack sizes), PerFotex (perforated).
This plant is being enlarged by 11,500 sq. ft. addition including tempering facilities and warehouse; is coming out with new product—Scatter-Pattern Perf-O-Tex—with diagonal pattern of punched holes for commercial trade.

CHAPMAN-WOODS, INC., Corvallis, Ore. (plant at Philomath, Ore.)
FLAKEBOARD
PRODUCTION: Rated at 25,000 sq. ft./day (est.)—3/8-in.
PERSONNEL: Pres. Ralph Chapman, Sec-Treas. B. N. Woods
PROCESS: Own development of process, new type press; plant start-up 1955 (experimentally); prod. start 1956
PANEL SIZE: 4x8 ft.
RAW MATERIALS: D fir, dry protein glue
USES: Building panels, corestock
CHARACTERISTICS: 3-ply panels made up of flake core with refined fiber faces

CHIPBOARD PRODUCTS, INC., Grants Pass, Ore.
PARTICLE BOARD
PRODUCTION: Rated at 20,000 sq. ft./day (est.) 11/16 in.
PERSONNEL: Pres. Ben Dierks
PROCESS: Kriebaum, 48-in. vertical extrusion; plant start-up 1955
RAW MATERIALS: D fir, resin, size
USES: Corestock.

CHIPCRAFT CORP., Morristown, Tenn.
PARTICLE BOARD
PRODUCTION: Pilot plant
PERSONNEL: Pres. John Crafton
PROCESS: Extrusion
(Organization designs and constructs plants.)

CLEAR FIR PRODUCTS CO., Springfield, Ore. (1116 South A)
FLAKE BOARD
PRODUCTION: 35,000 sq. ft./day, 1/4-in., estimated capacity
PERSONNEL: Pres. W. H. Gonyea
PROCESS: Continuous—gravity formed; plant start-up 1955
PANEL SIZE: 4x8 ft., 5-opening press
THICKNESSES: †NA
RAW MATERIALS: Dry by-product coniferous wood from parent plant, resin, sizing
SPEC. GRAVITY: †NA.

COLUMBIA HARDBOARD CO., Everett, Wash. (P. O. Box 1874, Seattle, Wash.)
PARTICLE BOARD
*PRODUCTION: to start Sept. 1956; 80,000 sq. ft. per day 3/4 in. capacity
PERSONNEL: Pres. F. L. Johnson
PROCESS: Dry
PANEL SIZE: 50x98-in.
THICKNESSES: 3/4 and 5/8-in.
RAW MATERIALS: shavings

COOS BAY LUMBER CO., HARDBOARD DIV., Coos Bay, Oregon
HARDBOARD
*PRODUCTION: 1955—60.0; 1956 (est.) 70.0
PERSONNEL: Pres. J. W. Forrester, Supt. A. Wehrle, Qual. Control P. Kvale
PROCESS: Dry, air-felted; plant start-up 1953
PANEL SIZE: 4x8-ft.; 8% to cut-up sizes; overlayments, sanding
THICKNESSES: 1/10 to 3/8-in.
RAW MATERIALS: D fir chips, wax, phenolic resin
SPEC. GRAVITY: 0.90 to 1.10
COLOR: light—natural fir
TRADE NAMES: Coos Bay Hardboard, Coos Bay Panelboard
USES: furniture, industrial
CHARACTERISTICS: smooth two sides.

CROSSETT LUMBER CO., Crossett, Ark.
MOULDED PRODUCTS
PRODUCTION: 3,000,000 plugs/year capacity
PERSONNEL: Edward Brown
PROCESS: Chipcraft; automatic moulding unit; plant start-up 1956
USES: Moulded paper plugs.

CURTIS COMPANY, INC., Clinton, Iowa
PARTICLE BOARD
PRODUCTION: Rated capacity 1 million sq. ft./year (est.)—1/4-in.
PERSONNEL: Prod. Mgr. R. V. Mann
PROCESS: Dry, 5-opening, 4x4 ft. press; plant start-up 1948
RAW MATERIALS: P pine, sawdust, resin
USES: Drawer bottoms, door panels, cabinets
TRADE NAME: Prespine.
DIXIE CHIPBOARD CO., Rural Hall, N. C.
PARTICLE BOARD
PRODUCTION: †NA
PERSONNEL: D. F. Schmidt, Mgr.
PROCESS: Kriebaum, vertical extrusion; plant start-up 1954
RAW MATERIALS: Mixed species wood
USES: Furniture, cabinets.

DOMINION PRIME WOOD PRODUCTS, LTD., Lachute, Quebec, Canada
MOULDED PRODUCTS
PRODUCTION: 3,000,000 plugs/year capacity
PERSONNEL: Jacques Bedard
PROCESS: Chipcraft; automatic moulding unit; plant start-up 1955
USES: Moulded paper plugs.

DURATEX S/A-INDUSTRIA E COMMERCIO, Sao Paulo, Brazil (P. O. Box 7611)
HARDBOARD
PRODUCTION: 1955—1,000 ton/month; 1956 (est.)—1,200 ton/month
PERSONNEL: Pres. Dr. Alfredo Egydio de Souza Aranha, V. Pres. Dr. Luiz Moraes Barros, V. Pres. Dr. Domingos Quirino Ferreira Netto, Mgng. Dir. Dr. Eudoro L. Villela, Mng. Dir. Dr. Nivaldo Coimbra de Ulhoa Cintra, Gen. Mgr. Carlos R. Vieitas
PROCESS: Swedish, Asplund Defibrators; plant start-up 1955
PANEL SIZE: 1.22x2.50 (or 3.00) meters; 20% into cut-up sizes
THICKNESSES: 2.5 to 6.0 mms
RAW MATERIALS: Eucalyptus chips, paraffin, vegetable resin, alum
SPEC. GRAVITY: 1.0
COLOR: Light brown
TRADE NAMES: Duratex
USES: Bldg. construction (18% interior, 20% exterior), furniture 60%, automobile mfg. 20%, industrial 40%
CHARACTERISTICS: Flexible, insect-proof, uniform surface, free of split and warp, oil tempered board is weather-proof
SPECIALTIES: Packings, prefabricated housing, acoustic ceiling with glass wool.

ELDRED WOOD CONVERSION CO., Eldred, Pa.
PARTICLE BOARD
PRODUCTION: 3,000,000 sq. ft./year capacity
PERSONNEL: L. C. Dahman
PROCESS Chipcraft; vertical extrusion; plant start-up 1955

FIBRACEL, S. A., Londres 258, Mexico 6, D. F. Mexico
HARDBOARD
PRODUCTION: 1955—30.3 million sq. ft./yr, 1956 (est.)—40 million sq. ft./yr.
PERSONNEL: Gen. Dir. Baltasar Marquez, Sls. Mgr. Genaro Barroso, Supt. Raul Madrazo, Tech. Dir. & Asst. Gen. Mgr. J. A. Ruiz Duarte, Engr. J. Ramon Casillas, Forester Pedros Arias Portillo.
PROCESS: west; plant start-up 1950
PANEL SIZE: 4x6-ft., 8-ft., 10-ft., 12-ft., 1% to cut-up sizes.
THICKNESSES: 1/10, 1/8, 3/16-in.
RAW MATERIALS: hardwood chips, alum, paraffin, rosin and sulfuric acid.
SPEC. GRAVITY: 0.995 to 1.000.
COLOR: brown
TRADE NAMES: Fibracel Duro 3, Fibracel Duro 5, Fibratex, Perfocel.
USES: interior, exterior construction, furniture, industrial. Newly developed uses: packings, doors.
CHARACTERISTICS: strength and flexibility.
SPECIALTIES: Pegboard, laminated 1/4-in. Boards are tempered and packaged for shipment.

FORDYCE WOOD PRODUCTS CO., Fordyce, Ark.
PARTICLE BOARD
PRODUCTION: 2,000 sq. ft./8-hr, (est), 11/16 in.
PROCESS: Chipcraft, horizontal extrusion, 24-in. opening; plant start-up 1954
RAW MATERIAL Dry pine and hardwoods
USES: Furniture cores.

FOREST FIBER PRODUCTS CO., Forest Grove, Ore. (P. O. Box 68)
HARDBOARD
*PRODUCTION: 1955—60.0; 1956 (est.) 60.0
PERSONNEL: Pres. Harold A. Miller, Production & Sls. Mgr. Tom Hughes, Supt. Gene Tower, Tech. Dir. Keith Kruse, S. W. Sls. Mgr. Henry Jacobson, N. W. Sls. Mgr. Jack Gumm
PROCESS: Own wet continuous process; plant start-up 1949
PANEL SIZES: 4x4 to 4x16-ft, 15% to cut-up sizes
THICKNESSES: 1/10 to 1/4-in.
RAW MATERIALS: D fir chips, NaOH, aluminum sulphate
SPEC. GRAVITY: 0.85 to 1.05
COLOR: Light
TRADE NAMES: Forall (laminated to 3/4-in.), Forestex (striated), Punchboard, T&G (tongue and groove), Foron (special industrial)
USES: Building constr. (interior 30%, exterior 20%), furniture 15%, automobile mfg. 15%, industrial 20%.

GRANITE BOARD, INC., Goffstown, N. H.
PARTICLE BOARD
PRODUCTION: 1.5 million sq. ft./year (est.), 3/4-in.
PERSONNEL: Pres. H. A. Hernsdorf
PROCESS: 10-opening 4x8-ft. press; plant start-up 1955
RAW MATERIALS: White pine
USES: Furniture cores.

GULF NAVAL STORES CO., Gulfport, Miss.
PARTICLE BOARD
PRODUCTION: 3,000,000 sq. ft./yr. capacity
PERSONNEL: L. L. Latimer
PROCESS: Chipcraft, vertical extrusion; plant start-up 1956

HART WOOD PRODUCTS, INC., Hart, Mich.
PARTICLE BOARD
PRODUCTION: 3,000,000 sq. ft./yr. capacity
PERSONNEL: Bud Tate
PROCESS: Chipcraft; vertical extrusion; plant start-up 1956.

HU-WOOD, North Sacramento, Calif.
PARTICLE BOARD
PRODUCTION: 5,000 sq. ft./day (est.)
PERSONNEL: Mgr. Fred Hughes
PROCESS: †NA; plant start-up 1944 (approx.)
RAW MATERIALS: Mill leftovers
USES: Decorative panels.

JASPER AMERICAN CORP., Henderson, Ky.
PARTICLE BOARD
*PRODUCTION: 1955—3.0; 1956 (est.)—6.0
PERSONNEL: Pres. Arnold F. Habig, Sls. Mgr. Anthony P. Habig, Supt. Nestor Kuper, Tech. Dir. Maurice Kuper
PROCESS: Chipcore—extrusion; plant start-up 1953
PANEL SIZE: cut to size
THICKNESSES: 9/16 to 17/8-in.
RAW MATERIALS: chips, urea glue
SPEC. GRAVITY not specified
TRADE NAMES: Stylemaster Chipcore
USES: furniture 50%, industrial 50%

THE LANE COMPANY, INC., Altavista, Va.
PARTICLE BOARD
*PRODUCTION: 1955—4.1; 1956 (est.)—4.1
PERSONNEL: Pres. E. H. Lane, Sr., V. Pres.-Gen. Mgr. E. H. Lane, Jr, Supt. F. T. Holland, Tech. Dir. E. W. Davidson, Engr. C. B. Sumpter
PROCESS: Extrusion; plant start-up 1948 as multi-platen, discontinued in favor of extrusion starting prod. in 1953
PANEL SIZE: 4 ft. wide, any length
THICKNESSES: 9/16 to 21/16-in.
RAW MATERIALS: miscellaneous species chips, urea formaldehyde resin
SPEC. GRAVITY: 0.62 to 0.67
TRADE NAMES: Lanewood
USES: furniture—90% used as core material
CHARACTERISTICS: uniform, economical product
Although this organization made considerable quantity of multi-platen board before switching to extrusion process, it reports finding the latter more economical to produce.

THE LONG-BELL LUMBER CO., Longview, Wash.
FLAKE BOARD
*PRODUCTION: 40.0 rated capacity
PERSONNEL: Pres. J. D. Leland, Supt. Wayne Kletch, Tech. Dir. Arthur Mottet, Sls. Mgr. Fay Foud
PROCESS: Long-Bell Crosscut Fiber & Flake; plant start-up 1953
PANEL SIZE: 4x8-ft., 10-opening press; 40% to cut-up sizes
THICKNESSES: 1/8 to 3/4-in.
RAW MATERIALS: D fir planer ends, phenol-formaldehyde resin, paraffin size
SPEC. GRAVITY: 0.6 to 1.0
COLOR: natural wood—cedar, fir P pine, maple, Phil. mahog.
TRADE NAMES: Flakewood (flake overlaid), Ven-O-Wood (veneer overlaid)
USES: Furniture, industrial, interior bldg. construction
CHARACTERISTICS: Attractive decorative board of high stiffness and high dimension stability
SPECIALTIES: Planks (16x96-in.) and parquet squares (12x12 and 16x16-in.) with tongue and groove edge joints.

MASONITE CORPORATION, Laurel, Miss. and Ukiah, Calif.
HARDBOARD
*PRODUCTION: 1955—1,100.0; 1956—same
PERSONNEL: Pres. John Coates, V. Pres. Sls. Paul Shoemaker, Sls. Mgr., F. O. Marion, V. Pres.-Gen. Mgr. (Laurel) Donald J. Gray; V. Pres.-Gen. Mgr. (Ukiah) William A. Cotton, Res. Dir. Robt. Boehm, Chf. Engr. Frank Lesniak
PROCESS: Wet and semi-dry; plant start-up 1926; Ukiah 1951
PANEL SIZE: Up to 6x16 ft.
THICKNESSES: 1/10 to 2-in.
RAW MATERIALS: Hardwood and softwood chips
SPEC. GRAVITY: 0.90 to 1.40
COLOR: Brown
TRADE NAMES: Masonite Presdwood, Peg-Board, Panelwood, Tempered Duo'ux, Leatherwood, Tempertile, Panelply
USES: Walls, ceilings, cabinets, underlayment, siding, decorative specialties, bathroom and kitchen "tiles", concrete forms, etc.
CHARACTERISTICS: Produces wide range of Hardboard types with built-in specialty characteristics.

MASONITE CO. OF CANADA, LTD., Gatineau, Que., Canada
HARDBOARD
PRODUCTION: †NA
PERSONNEL: Gen. Mgr. P. A. Sargent
PROCESS: Masonite; plant start-up NA
TRADE NAMES: Presdwood, Temprtile, Leatherwood, Masonite.

MILLER HOFFT, INC., Richmond, Va.
PARTICLE BOARD
PRODUCTION: Pilot Plant
PERSONNEL: Pres. H. C. L. Miller
(Organization designs and constructs plants.)

MISSISSIPPI PRODUCTS, INC., Jackson, Miss.
PARTICLEBOARD
*PRODUCTION: 1955—10.5; 1956 (est.) 10 to 20
PERSONNEL: Pres. G. A. Huth; Sls. Mgr. C. M. Ryan; Div. Supt. G. R. Tuyman: Tech. Dir. John Griffith; Prod. Eng. F. W. Preuss; Oper. Mgr. G. Bracken.
PROCESS: Multi-platen
PANEL SIZE: 48x96-ft. (untrimmed); 100% to cut-up sizes
THICKNESSES: 1/8—11/8-in.
RAW MATERIALS: Southern hardwood chips, urea resin
SPEC. GRAVITY: .65 to .70
COLOR: none
TRADE NAMES: Nutex
USES: Furniture 100%
SPECIALTIES: Core stock.

NU-PLY, INC., Bemidji, Minn.
HARDBOARD (and Nu-Ply, a hardwood veneered panel with fiber core.)
*PRODUCTION: 20.0 to 15.0 est. for 1956
PERSONNEL: Pres. A. C. Nasvik, Sls. Mgr. E. J. Murphy, Supt. & Plant Mgr. E. R. Eggers, Tech. Dir. Dr. Arnold Luhning
PROCESS: Elmendorf—dry (S2S); plant start-up 1956
PANEL SIZE: 4x8-ft.
THICKNESSES: Nu-Ply 1/4, 1/2, 3/4, 1.0-in.; Hardboard: 1/8 thru 3/4-in.
RAW MATERIALS: aspen chips
SPEC. GRAVITY: .70 to 1.10
COLOR: light
TRADE NAMES: Nu-Ply, Perfo-Ply, Nu-Plank (tongue & groove), Nu-Bord
USES: interior constr. 20%, furniture 20%, automobile mfar. 25%, industrial 35%
CHARACTERISTICS: Both products should punch and die cut very well
SPECIALTIES: Nu-Plank, a random width plank; Perfo-Ply, punched Nu-Ply like Peg Board.

OREGON FIBRE PRODUCTS, INC., Pilot Rock, Ore.
HARDBOARD
*PRODUCTION: 120.0 capacity, but output also in form of insulating board
PERSONNEL: Pres. E. C. Kerns, Gen. Mgr. O. W. Frost, Plant Mgr. O. B. Eustis, Tech. Dir. Robert Paul
PROCESS: wet forming (continuous), dry pressing; plant start-up 1954

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PANEL SIZE: up to 4x16 ft.; specialty treating: tempering, packaging for shipment
THICKNESSES: 1/10 to ¼-in.
RAW MATERIALS: Lodgepole and ponderosa pine chips, acid, size
TRADE NAME: Duron
Entire output sold to U. S. Gypsum.

OREGON LUMBER CO., Dee, Oregon
HARDBOARD
*PRODUCTION: 1955—40.0; 1956 (est.)—60.0
PERSONNEL: Pres. C. M. Hines, Sls. Mgr. J. M. Tisdall, Mgr. W. J Runckel, Supt Geo. Bethel
PROCESS: All-Board—fourdrinier; plant start-up 1952
PANEL SIZE: 4x16-ft.; 10% to cut-up sizes
RAW MATERIALS: chips (local softwoods with bark), alum, acid, phenolic resin
TRADE NAMES: Allwood, Prestpanel, Stribord, Shobord
USES: Bldg. const.—45% interior, 10% exterior, automobile mfg. 10%, industrial 35%
SPECIALTY TREATING: Striating, tempering

OWOSSO MANUFACTURING CO., Benton, Ark.
PARTICLE BOARD
PRODUCTION: 1,800,000 sq. ft./year capacity
PERSONNEL: Pres. Paul Leird
PROCESS: Chipcraft; horizontal extrusion, 24-in.; plant start-up 1954
USES: Core stock.

PACK RIVER LUMBER CO., Sandpoint, Ida.
FLAKE BOARD
PRODUCTION: 160,000 sq. ft./day (est.) ¼-in.
PERSONNEL: Pres. J. M. Brown, Jr., V. Pres. & Chem. Engr. D. L Haynes
PROCESS: Clark; 12-opening 4x16-ft. press; plant start-up 1955 (est.)
RAW MATERIALS: Sawmill softwood residues
USES: Decorative panels.

PACQUA, INC., Dillard, Oregon (P. O. Box 78)
(Pacific Plywood Co. affiliate)
PARTICLE BOARD
*PRODUCTION: To start Sept. 1956, estimate 10.5 this year
PERSONNEL: Pres. & Gen. Mgr. Wm. F. Forrest, Supt. & Tech. Dir. Wm. H. Cooke, Sls. Mgr. John J. Longfellow, Asst. Gen. Mgr. Paulus McKee
PROCESS: Dry, company-designed plant, 20 opening hot press
PANEL SIZE: 4x8-ft., cut-up section considered: overlayment planned
THICKNESSES: ⅜ to 1¼-in.
RAW MATERIALS: D fir chips, resin, size
SPEC. GRAVITY: 0.60 to 0.95
Possible specialties not yet determined.

POINSETT LUMBER & MFG. CO., Pickens, S. C.
PARTICLE BOARD
Subsidiary of Singer Mfg. Co., engineered and built by Miller Hofft Co.; plant to start up in 1956
USES: Corestock.

ROCK ISLAND MILLWORK CO., Rock Island, Ill. (2525 Fourth Ave.)
PARTICLEBOARD
*PRODUCTION: 1955—18.0; 1956 (est.)—20.0
PERSONNEL: V. Pres. E. A. Gerber, Sls. Mgr. H. S. Kettrick, Tech. Dir. Dave Haile
PROCESS: Resinwood (dry); plant start-up 1949
PANEL SIZE: 49x97-in.; 10% to cut-up sizes
THICKNESSES: 3/16, ¼, 9/32, ⅜, ½-in.
RAW MATERIALS: Ponderosa pine sawdust, powdered thermosetting phenolic resin
SPEC. GRAVITY: 0.9 to 1.1
COLOR: Similar to P Pine
TRADE NAMES: Resinwood, Resincore
USES: 5% interior and 5% exterior bldg. constr. 80% furniture. 10% industrial
SPECIALTIES: Cabinets, table tops, panel stock, core for high pressure decorative plastic laminates: recently developed work bench of this board "with highly durable work surface". (Ed. Note: Producer reports Resinwood tests about 30% harder than maple and lends itself "ideally" to use in the new product—industrial work benches.)

RODDISCRAFT, INC., Arcata, Calif. (P. O. Box 248)
FLAKE BOARD
Plant under construction, estimate 12MM sq. ft. production (¾-in.) for 1957
PERSONNEL: Gen. Mgr. Kirk R. Cooper, Plant Mgr. Robert K. Molloy
PROCESS: Behr-Homogenholz (batch)
PANEL SIZE: 4x16-ft.; 25% to cut-up sizes
THICKNESSES: ½, ⅝, ¾-in.
RAW MATERIALS: Chip of all native species, resin
SPEC. GRAVITY: 0.5 to 0.7
COLOR: White fleck
Characteristics reported: Quality board, close tolerances.

SOUHEGAN WOOD PRODUCTION, INC., Wilton, N. H.
(Successor to Souhegan Mills, Inc.)
PARTICLE BOARD
*PRODUCTION: 1955—9.5; 1956 (est.) 15.0
PERSONNEL: Treas. Clarence E. Weymouth, Sls. Mgr. C. Randolph Myer, Jr., Supt. Leonard F. Mahoney, Jr.
PROCESS: Sylvacore; plant start-up 1945, (reorganized March 1955)
PANEL SIZE: 4x8-ft.; 40% to cut-up sizes
THICKNESSES: ½ to ⅞-in.
RAW MATERIALS: W. pine shavings, urea, formaldehyde
COLOR: Light
TRADE NAMES: Sylvacore
USES: furniture, industrial, interior bldg. constr.
CHARACTERISTICS: uniform density, low moisture absorption
SPECIALTIES: building board underlayment, cut-to-size stock
NEWLY DEVELOPED USES: molded products such as paper plugs.

SOUTHERN PLASWOOD CORP., Hope, Ark. (P. O. Box 123)
PARTICLE BOARD
*PRODUCTION: 12.5 estimated capacity
PERSONNEL: Pres. Guy E. Basye, Supt. E. J. Ogran, Sls. Mgr. Gordon H Bayless
PROCESS: Plaswood-dry; plant start-up 1950
PANEL SIZE: 4x8-ft., multi-opening press; 5% to cut-up sizes
THICKNESSES: ½ to 1¼-in.
RAW MATERIALS: chips and sawdust
SPEC. GRAVITY: 0.61 to 0.75
COLOR: similar to lumber
USES: furniture core, utility board, base for plastics

SOUTHERN PLYWOODS, INC., Greenville, Fla. (P. O. Box 448)
PRODUCTION: Operating pilot plant
PERSONNEL: Asst. Mgr. Peter J. Stern

SUPERWOOD CORPORATION, Duluth, Minn.
HARDBOARD
*PRODUCTION: 1955—80.0, 1956 (est.)—80.0
PERSONNEL: Pres. M. J. Opsahl, V. Pres. K. V. Hafner & G. A. Jondal, Tech. Dir. G. C. Fewson
PROCESS: Chapman—wet batch; plant start-up 1949
PANEL SIZE: 4x8-ft.; 5% to cut-up sizes
THICKNESSES: 1/10, ⅛, 3/16, ¼, 5/16-in.
RAW MATERIALS: aspen chips, phenolic resin
SPEC. GRAVITY: 1.00 to 1.02
COLOR: blond
TRADE NAMES: Superwood
USES: siding, underlayment, panel stock, tempered and standard hardboard
SPECIALTIES: tempering, lap siding with attached shadowline strip.

SWAIN INDUSTRIES, INC., Seymour, Ind.
PARTICLE BOARD
PRODUCTION: 5 million sq. ft./year (est.) capacity
PERSONNEL: Pres. B. F. Swain
PROCESS: Two 4x8-ft. presses; plant start-up 1947
RAW MATERIALS: Furniture residue wood
USES: Furniture stock.

SYLVANAL, INC., Longview, Wash.
FLAKE BOARD
PRODUCTION: 7,500 sq. ft./day (est.), ¼-in.
PERSONNEL: Pres. F. R. Smith, V. Pres. E. E. Anderson
PROCESS: Dry, air felting (own); plant start-up 1954
PANEL SIZE: 3x3 ft
THICKNESSES: ¼-in.
RAW MATERIALS: Shavings and fibers of various forms, veneers, variety of native and imported species
USES: Decorative panels
CHARACTERISTICS: Fiberous core overlaid w/ decorative veneers.

TEMPRON CORP., El Paso, Tex.
HARDBOARD
PRODUCTION: †NA
PERSONNEL: Pres. Dr. J. F. Berliner
Plant under construction.

THOMASON PLYWOOD CORP., Fayetteville, North Carolina

PARTICLE BOARD
PRODUCTION: 3,000,000 sq. ft./year capacity
PERSONNEL: B. H. Thomason
PROCESS: Chipcraft, vertical extrusian; plant start-up 1955

TRAFALGAR MILLS, LTD., South Nelson, N. B., Canada
PARTICLE BOARD
PRODUCTION: †NA
PERSONNEL: Pres. J. L. O'Brien, Sls. Mgr. J. J. Sutherland
PROCESS: Plaswood—dry; plant start-up NA
RAW MATERIALS: Spruce and pine
USES: Corestock, sheathing, underlayment, wall panels.

U. S. GYPSUM CO., Greenville, Miss.
HARDBOARD
PRODUCTION: 71.0 sq. ft./year estimated capacity
PROCESS: Formed wet, pressed dry; plant start-up 1934
RAW MATERIALS: Hardwoods
TRADE NAMES: Duron Hardboard

UNITED STATES PLYWOOD CORP., Redding, Calif. (P. O. Box 1688)
FLAKE BOARD
*PRODUCTION: 1955—50 (3/8-in. basis); 1956 (est.)—75 (3/8-in. basis)
PERSONNEL: Gen. Mgr. Ken Morrow, Mgr. W. C. Smith, Supt. W. E. Marander, Tech. Dir. Dan Langford, Engr. Vern Daniels, Qual. Control G. Schuman
PROCESS: Novoply, plant start-up 1951
PANEL SIZE: 6x12 and 4x16-ft.; 65% into cut-up sizes
THICKNESSES: 3/8, 1/2, 5/8, 11/16, 1, 1 1/8, 1 3/16, 1 5/32-in.
RAW MATERIALS: D fir, w fir, P. pine, s. pine chips and shavings, urea formaldehyde resin
SPEC. GRAVITY: 0.62 to 0.71
COLOR: "Pine" color
TRADE NAMES: Novoply
USES: Bldg constr. (interior) 20%, furniture 60%, industrial 20%—including furniture corestock, cabinet and fixtures, decorative paneling
CHARACTERISTICS: Attractive surface pattern, "very flat", high strength, water resistant.

WABASH SCREEN DOOR CO., Minneapolis, Minn.
PARTICLE BOARD
PRODUCTION: 1/5 million sq. ft./year (est.), 3/4-in.
PERSONNEL: Asst. V. Pres. L. A. Patronsky
PROCESS: Miller Hofft engineered and built; plant start-up †NA
PANEL SIZE: 8-opening, 6x6-ft. press
USES: Cores—for plastic laminates and furniture.

WESTERN NU-PLY CORP., South Bend, Wash.
HARDBOARD faced with hardwood
*PRODUCTION: 1955—10.0; 1956 (est.) 35.0
PERSONNEL: Pres. Lloyd K. Johnson, Gen. Mgr. James L. Zeigler, Supt. Ed Tobiason, Engr. Nels Weston
PROCESS: Dry fiber; plant start-up 1955.
PANEL SIZE: 4x8-ft.; entire production full size
THICKNESSES: 1/8, 3/16, 1/4-in.
RAW MATERIALS: D fir chips, wax, phenolic resin
SPEC. GRAVITY: 0.95 to 1.10
COLOR: Light brown
TRADE NAME: Nu-Ply
USES: Exterior building constr. 50%, furniture 20%, industrial 30%
CHARACTERISTICS: Smooth two sides.

WEYERHAEUSER TIMBER CO., Klamath Falls, Ore.
HARDBOARD
*PRODUCTION: 90.0 annual capacity
PERSONNEL: Pres. J. P. Weyerhaeuser, Jr., Gen. Mgr. C. H. Ingram, Plant Mgr. D. S. Troy, Mgr. Spec. Prods. Div. R. D. Pauley, Hdbd. Sls. Mgr. R. T. Miller, Supt. J. G. Robinson, Tech. Advisor Kjell Stordalen
PROCESS: Continuous, dry forming; plant start-up 1954
RAW MATERIALS: Coniferous chips, resin, sizing.

WEYERHAEUSER TIMBER CO., North Bend, Ore.
PARTICLE BOARD
PRODUCTION: 4.5 million sq. ft./year rated capacity, 3/4-in.
PERSONNEL: Mgr. A. O. Karlen
PROCESS: Engineered and built by Miller Hofft; plant start-up 1955
PANEL SIZE: 20-opening, 4x8-ft. press
RAW MATERIALS: D fir sawmill residue wood
USES: Cores for plastic laminates, furniture, doors; wall paneling

WILLAMETTE FIBRE & CHIP BOARD, INC., Sweet Home, Ore. (P. O. Box 516)
PARTICLE BOARD
*PRODUCTION: 1955—9.0; 1956 (rated cap.) 27.0
PERSONNEL: Pres. John Tyner, V. Pres.-Sls. Mgr. Hobert O. McQueary, Supt. L. W. Kemper
PROCESS: Own—dry; plant start-up 1955
PANEL SIZE: 4x8; cut-up section and overlayment planned
THICKNESSES: 3/8-7/8
RAW MATERIALS: D fir shavings, resins, sizing
SPEC. GRAVITY: 0.60 to 0.70
COLOR: Medium D fir
TRADE NAME: "Rezwood"
USES: Bldg. constr. (75%), interior and exterior, for falls, floors, ceiling, sheathing; furniture (25%)
CHARACTERISTICS: Machinability, acoustical properties, moisture resistant, lack of warping tendency.

WYNNEWOOD PRODUCTS CO., Jacksonville, Tex.
PARTICLE BOARD
PRODUCTION: 2 million sq. ft./year capacity (est.), 11/16-in.
PERSONNEL: Gen. Mgr. T. B. Johnson
PROCESS: †NA; plant start-up 1955
PANEL SIZE: 10-opening, 4x8-ft. press
RAW MATERIALS: Southern pine.

YAMASKA MILLS, INC., St. Pie de Bagot, P. Q. Canada
FLAKE BOARD (core)
*PRODUCTION: 1955—5.0; 1956 (est.)—8.0
PERSONNEL: Pres. Homer Dufresne, Sls. Mgr. Jacques Dufresne, Supt. Lucien Roy, Tech. Dir. J. Dufresne, Engr. J. Dufresne
PROCESS: Mechanical; plant start-up 1939
PANEL SIZES: 100% to cut-up sizes
THICKNESSES: 1/2, 5/8-in.
RAW MATERIALS: Aspen, rosen size, alum
COLOR: Natural aspen
TRADE NAMES: Yamaska Board
USES: 100% to interior bldg. constr.

*Production data 1/8-in. basis in millions square feet per year.
†NA: Information Not Available.

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Financial

Forest Industries Securities, Year-end Reports, 1954-1955

Compiled by Pacific Northwest Co., Seattle, Wash.

	Year End—Nominal Quotations*		Earned Per Share*		Dividend Paid Per Share*	
	1954	1955	1954	1955	1954	1955
American Forest Products Corp.	15-OW	23 1/2-25	$ 2.06	$..	$ .87 1/2	$ 1.00#
Atlas Plywood Corp.	12 1/8	18 1/4-19 3/4	.28	.45	Nil	.15
British Columbia Forest Products	9-9 3/4	16 3/8-17 7/8	1.09	1.58	.40	.42 1/2
Calaveras Land & Timber Corp.	23-25	24-26	2.48	..	3.00	3.00
Canadian Western Lumber	13 3/4-15 1/2	14-14 3/4			Nil	Nil
Cascades Plywood	27-29	31-33	2.41	3.20	2.00	2.00
Central Coal & Coke Co.	34-37	37 1/2-39 1/2	.82	1.62	4.00	1.00
Coos Bay Lumber Company	73-OW	118-OW	7.47	16.66	4.00	8.00
Crossett Company Class "A" or "B"	21-24	31 1/2-34	1.80	1.81	.50	.55
Crown Zellerbach Corp.	42 1/2	58 7/8	2.58	3.11	1.30	1.53
Diamond Match Co.	31 1/2	35 3/8	2.38	3.02	1.20	1.50
Edward Hines Lumber Co.	41-44	44-46	4.57	..	2.25	3.00
Georgia-Pacific Plywood	26 1/2	39 7/8	1.54	5.06	.25	1.00#
Harbor Plywood Corp.	14 3/8-15 3/4	14 1/2-14 3/4	1.04	..	.25	.15
Keyes Fibre Co. Com.	28 1/2-30	22 1/2-24	2.33	2.01	1.00	1.10
Kirby Lumber Corp. Com.	36-39	45-48	.62	..	Nil	Nil
Long Bell Lumber Com.	21 3/8-23 3/4	27 1/4-28 3/4	1.88	..	1.00	1.75
Longview Fibre Co. Com.	61-	82 1/2-86 1/2	4.72	5.24	2.00	2.20
M & M Wood Working Co.	14 1/2-15	23 3/8-24	1.71	..	.35	.70
MacMillan Bloedel "B"	28 3/4-29 3/4	41 1/2-43 1/4	2.41	3.55	.87 1/2	1.00
Medford Corp., Com.	83-OW	118-OW	11.52	12.12	5.00	7.00
Minnesota & Ontario Paper Co.	51 3/4-55	69	4.72	5.75	2.00	2.40
Northern Redwood Lumber Co. Cap.	144-OW	300-OW	26.32	..	10.00	10.00
Pacific Lumber Co. Capital Stock	155-OW	215-OW	13.06	..	8.00	10.00
Pickering Lumber Co. Com.	12 3/4-13 3/4	13 1/2-15	1.33	..	.97 1/2	1.00
Plywood Inc., Com.	2 1/2-2 7/8	3-3 3/4	.21	.56	Nil	Nil
Pope & Talbot Inc. Com.	15 1/4-16 3/4	17 1/4-18 3/4	.50	..	.80	.80
Powell River Co. Lt., Common	45 1/4-48	56-58	2.68	2.90	1.60	1.80
Puget Sound Pulp & Timber	50 1/4-52	62 1/4-64	4.12	4.32	2.00	2.10
Rayonier, Inc.	24 5/8-24 3/4	38 1/2-40	2.05	2.86	.70	1.08
Roddis Plywood, Com.	9 3/4-11	14 3/4-15 3/4	1.20	1.78	.40	.50
Scott Paper Co. Com.	61 3/8	69 3/4	2.33	2.65	1.57 1/2	1.80
Southwest Lumber Mills, Com.	5 3/4-6 3/8	7 1/2-8 1/2	.31	..	Nil	.30
Union Lumber Co. Com.	23 1/2-25 1/2	36-OW	3.51	4.15	1.00	1.25
U.S. Plywood Corp. Com.	36 3/8	39 1/2-	3.51	..	1.40	1.70
Weyerhaeuser Timber Co.	27 1/8-28 7/8	41-43	1.43	1.98	.75	1.00

*Adjusted for stock splits and stock dividends
#Plus stock

Reported by Merrill Lynch, Pierce, Fenner & Beane, New York City

	Closing Price		Earned Per Share		Dividend Per Share	
Company	12/31/54	12/30/55	1954	1955	1954	1955
Abitibi Power & Paper Co., Ltd.	27 f	35 1/4 f	$ 2.49 f	..	$ 1.20 b	$ 1.27 1/2 b
Anglo-Canadian Pulp & Paper Mills, Ltd.	39 f	49 f	3.34 f	..	2.00 b	2.00 b
Anglo-Newfoundland Development Co., Ltd.	11 f	12 1/2 f	0.66 f	..	0.60 b	0.60 b
Bathurst Power & Paper Co., Ltd. Class "A"	59 f	63 1/2 f	4.00 f	..	3.00 b	3.00 b
Brown Company	15 3/8	17 3/4	1.24	0.81	Nil	0.50
Bruce (E. L.) Co.	19 3/8 a	26 3/4	2.20	3.36 a	0.91 a	1.10 1/2 a
Camp Manufacturing Co., Inc.	30 Bid	43 Bid	2.67	..	1.40	1.50
Champion Paper & Fibre Co.	54	64 1/2	4.13	..	2.00	2.00
Chesapeake Corp. of Virginia (c)	53 1/2	69 1/2	4.82	6.77	2.00	2.50
Chicago Mill & Lumber Co.	17-18 1/2	18-19 1/2	1.17	1.13	1.00	1.00
Consolidated Paper Co.	22	21 3/4	1.36	2.23	1.75	1.50
Consolidated Water Power & Paper	18 1/8 a-18 3/8 a	34 1/2-36 1/2	1.77 a	..	0.70 a	0.85 a
Container Corp. of America	65	75 1/2	5.31	6.09	2.50 a	3.00
Coosa River Newsprint Co.	70 Bid	98 Bid	6.93	..	Nil	1.62 1/2
Dierks Forests, Inc.	95 1/2 Bid	102 Bid	3.85	..	2.73 a	N.A.
Donohue Brothers, Ltd.	26 1/4 f	32 f	2.64 f	..	1.20 b	1.40 b
Eastern Corp.	23 1/2	29 1/8	2.61	3.40	1.00	1.15
Eddy Paper Co., Ltd. Class "A" Conv.	34 f	64 3/8 f	6.61 f	..	1.00 b	1.00 b
Evans Products Co.	8 3/8 a	23 1/2	0.50 a	..	0.16 2/3 a	0.75 a
Fraser Companies, Ltd.	26 1/2 f	32 f	2.16 f	2.56 f	1.00 b	1.20 b
Robert Gair Company, Inc.	31 3/4	28 7/8	2.28 q	2.80	1.50	1.50
Glatfelter (P. H.) Co.	31-34	57-60	7.27	..	1.50	1.85
Great Lakes Paper Co., Ltd.	30 3/4 f	44 f	2.45 f	..	1.60 b	1.60 b
Great Northern Paper Co.	78	96 3/4	3.97	4.46	3.00	3.00
Greif Brothers Cooperage Corp. Class "A"	24 5/8	30	2.74 k	3.55 k	0.90	1.00
Hammermill Paper Co.	23 1/2	37	1.93	3.10	1.00	1.15 e
Hudson Pulp & Paper Corp. Class "A"	26 1/2-28 1/4	27 1/2-29 1/2	2.06 s	1.57 s	1.26	1.26
International Paper Co.	88 3/4	113 3/4	7.05 r	..	3.00 e	3.00 e
Kimberly Clark Corp.	40 7/8	45 5/8	2.62 a	2.84	1.35 a	1.72 1/2 e
Marathon Corp.	29 3/4	33 3/4	2.01	2.51	1.20	1.25
Masonite Corp.	27 3/8	39 1/2	2.67	4.51	1.00	1.55 e
The Mead Corp.	57	71 1/2	4.62	6.29	1.85 e	2.10 e
Mengel Co.	28	34	1.65	..	1.00	1.00
National Container Corp.	16 3/8	22 3/4	1.01	2.25	0.60	0.60 e
Nekoosa-Edwards Paper Co.	23-24 3/8 a	40 1/8-42 1/4	2.75 a	3.67	1.14 a	1.12 a
Ohio Match Co.	12 5/8-13 5/8	14 1/4-14 3/4	1.11	..	0.50	0.50
Powell River Co., Ltd.	43 3/4 f	56 3/4 f	2.68 f	..	1.60 b	1.80 b
Price Brothers & Co., Ltd.	45 f	53 3/4 f	3.59 f	..	2.00 b	2.00 b
Rhinelander Paper Co.	35 3/4	34 5/8	2.61	3.02	1.60	1.60
Riegel Paper Corp.	26 3/8 a-28 a	35 1/4-36 1/4	2.07 a	2.46	1.00 a	1.08 1/3 a
St. Lawrence Corp., Ltd.	70 f	84 1/2 f	4.04 f	..	2.00 b	2.00 b
St. Regis Paper Company	40 1/8	43 1/2	2.62	2.95	1.57 1/2	1.80
Smith (Howard) Paper Mills, Ltd.	31 f	40 f	2.70 f	..	1.00 b	1.20 b
Southland Paper Mills, Inc.	65 Bid	100 Bid	8.68	..	3.00	2.00
Union Bag & Paper Corp.	23 5/8 g	33 1/4 g	2.03 g	2.68 g	1.16 2/3 g	1.33 1/3 g
United States Lumber Co.	5-5 3/8	5 5/8-6	0.20	..	0.35	0.45
Vulcan Corp.	5 1/4-5 5/8	8-8 1/2	0.47	..	0.30	0.40
Warren (S. D.) Co.	24 1/2-26	34-35 1/2	1.65	2.85	1.00	1.15
West Virginia Pulp & Paper	40 1/4	46 3/8	2.57	3.08	1.40	1.40

a—Adjusted for stock splits and/or stock dividends of 10% or more in 1955 and 1954. b—In Canadian funds, less 15% non-residence tax. c—Stockholders vote March 20, 1956 on 2-for-1 stock split. e—Plus stock dividends of less than 10%. f—In Canadian funds. g—Adjusted for 3-for-1 split effective 2-24-56. h—On participating basis; fiscal years ended February 28, 1954 and 1955 respectively. k—Includes non-recurring income from sale of assets; on participating basis. n—Excludes non-recurring capital gain equal to $0.56 per share. p—Includes operations of General Package Corporation, acquired May 31, 1955, for full year 1955; pro forma in 1954. q—After special charges equal to $0.26 per share. r—Includes special credits equal to $0.58 per share. s—On participating basis. N.A.—Not Available.

Douglas Fir Region

• The Douglas fir logging industry's inventory at the end of 1955 was just about as favorable as it has been for other recent years. Comparative board foot figures for early 1955 and 1956 were:

Date	Puget Sound	Columbia River	Grays Harbor
Jan. 1, 1955	489 MM	422 MM	72 MM
Jan. 1, 1956	483 MM	421 MM	68 MM

The Pacific Northwest Loggers Assoc., headquartered in Seattle, Wash., keeps current records of log inventories for the above three districts in the Douglas fir region. The following tables show log inventory fluctuations during 1955 and also the January 1 inventories for several previous years.

Date	Puget Sound	Columbia River	Grays Harbor
Jan. 1, 1950		473 MM bf	77 MM bf
Jan. 1, 1951		391	90
Jan. 1, 1952		503	107
Jan. 1, 1953		589	108
Jan. 1, 1954		526	75
Jan. 1, 1955	489 MM bf	422	72
Feb. 1, 1955	438	383	75
Mar. 1, 1955	386	348	77
Apr. 1, 1955	338	289	70
May 1, 1955	291	260	70
June 1, 1955	293	271	78
July 1, 1955	322	303	89
Aug. 1, 1955	367	331	85
Sept. 1, 1955	431	404	88
Oct. 1, 1955	511	432	78
Nov. 1, 1955	563	479	80
Dec. 1, 1955	539	451	70
Jan. 1, 1956	493	421	68
Feb. 1, 1956	416	369	55

1955 WAS UNIQUE in that conditions generally were very favorable to a large total log production figure. This applies to both natural and man-made conditions. There were no region-wide labor difficulties to interfere with or suspend production.

The log market was strong all year. Lumber, plywood and pulp and paper mills required large volumes to sustain high (and in some cases record) levels of production.

There were some fire closures but total production did not suffer as a result.

The year actually started a little slowly but production built up during the summer months; log inventories in the major districts of Puget Sound, Columbia river and Grays Harbor were in good shape on Jan. 1 1956. (See table in this Yearbook Number).

An unseasonal cold spell in mid-November slowed down logging throughout the Douglas fir region. December was likewise affected by earlier-than-usual snow and cold. This cold weather set new records for minimum temperatures in many locales.

A new motion picture is being produced by the Pacific Northwest Loggers Assoc. on falling and bucking. Work has been completed on this film (primarily a safety picture) and it is expected to be ready for showing to industry groups this spring. It is the association's first film showing safe techniques for falling and bucking with late-model power chainsaws.

TRACTORS ARE GETTING bigger, like this Caterpillar D9 on Oregon's Tillamook Burn.

Logging Continues Active

New equipment shows increasing trend to more mobility in yarding & loading.

IN WASHINGTON, A MULTI million dollar timber deal resulted in consolidation of timber acreages of Weyerhaeuser and Simpson Logging Co. for long-range management. First Simpson bought the Schafer Bros. Lumber & Shingle Co. of Aberdeen. This included all mill facilities, a large volume of timber in the foothills of the Olympic Mts. and cutting rights to a substantial volume of National Forest timber. Shortly afterwards, Weyerhaeuser Timber Co. made a trade whereby WTCo. for certain stands adjacent to Grays Harbor exchanged with Simpson land more naturally falling into Simpson's operating area. In addition, Weyerhaeuser also took the Schafer mill at Aberdeen, which it now operates as the Grays Harbor Lumber Div. of the Willapa Branch.

Earlier in the year Weyerhaeuser bought out the Wirkkala Bros. Logging Co. at Naselle.

Many other smaller timberland and mill sales were effected during the year.

National forest land in western Washington is gradually getting closer to allowable annual cuts. For example, reinventory of several districts on the Olympic NF served to increase the cut some 30 million feet per year. The Mount Baker NF and the Snoqualmie NF had large cuts.

STUMPAGE PRICES CONTINUED to climb to high figures under competive bidding. Plywood manufacturers on the search for quality peelable fir timber generally are willing to bid up to over twice the appraised prices for stumpage. The geography of the plywood industry on Puget Sound district is such that mills in Bellingham, Anacortes, Everett, Seattle, Tacoma and Olympia, or Port Angeles, will go many miles from home for logs, as long as the stands themselves aren't too far from salt water.

For example, competitive bidding on a 31.4 million bd. ft. sale of timber on the Quilcene District, Olympic National Forest in January, pushed

RUBBER TIRED mobile yarders and loaders are being used in all regions, are ideally suited for salvage logging, light selection cuts.

the sale price to just over double ($54.88) the appraised value per M. Anacortes Veneer, Inc., Anacortes, Wash., was high bidder with a total of $1,723,650 vs. appraised price of $860,495. Involved were following volumes (M bd. ft.) Douglas fir, 22.9; hemlock, 6; and cedar, 1.5. Last Sept., Anacortes successfully bid in 28 million on the Mt. Baker NF.

Operators are enthusiastic over the new heavier equipment, such as the new bigger tractors. However, they agree that such machines can be used only in places where the expenditure is justified. The new combination yarding and loading machines have proved versatile and valuable. Log loading attachments or log-handling attachments on tractors have special appeal for smaller loggers who can't afford one machine for loading alone.

Steel wheel undercarriages on high-powered yarders continue in favor, one operator having bought two new such units.

Retractable hydraulic jacks for outrigging on mobile loaders during log loading are proving a good innovation.

WESTERN WASHINGTON LOGGERS can't point with pride to any-one machine and say, "This new rig solves all our problems and is just what we've always wanted." But they appreciate that there has been a continuous program of product improvement by logging equipment manufacturers.

Greater advantage is being taken of advances in hydraulic, electric and air attachments and controls for various logging machines and trucks in yarders, loaders and trucks. The torque converter in yarders and loaders and more recently in logging trucks and rubber-tired loading machines is hailed as a great improvement, although cost of many of these units and the restricted applications have slowed down any general adoption of TC-driven equipment. Hydraulic retarders are in use on some of the tougher hauls.

The hydraulic ripper attachment for tractors should prove as useful to loggers as to highway construction industry.

In diesel engines, the turbocharger is attracting attention. The oil clutch in tractors is reported to be a big help in reducing wear and taking shock from action of the clutch. As horsepower goes up and more heat is generated, the oil helps dissipate the extra heat.

Rapid-cutting dependable power saws are the backbone of any cutting operation; new improved and lighter, more powerful chainsaws reduce the per unit cost by doing more felling and bucking in less time.

One prominent logger expects to see a lot more development in portable spar trees, of which several commercial models are available. High climbers, like handsawyers and buckers, aren't so common anymore.

TIMBER MANAGEMENT. Serious inroads in timber are being made by the Silver fir bark beetle in the Cascades. Control methods consists of logging infested trees, but this method is expensive and well nigh impossible where existing road systems do not adequately penetrate into infested areas. A mysterious hemlock mortality has killed untold millions of board feet of timber but effective control measures have not been applied to date. Bear damage on the Olympic Peninsula continues despite efforts to kill off the bears. Seedlings in many areas are still heavily devastated by rabbits, deer and other hungry pests; foresters and biologists are cooperating on control measures.

"LITTLE ORPHAN ALDER" no longer need feel neglected for want of parental interest. Gathering more support as it rolled along, Dr. Donald Clark's idea to get alder and other hardwood owners, loggers, millmen and users together culminated in the Northwest Hardwood Association. This group is looking into all phases of the alder situation and hopes to promote better management of alder stands and dissemination of information to landowners on the need for proper care and utilization.

One factor which brought the hardwood situation to a "head" was opening of the newly modernized Coos Bay Pulp Corp. plant at Anacortes, Wash., and Weyerhaeuser's new expanded pulping facilities at Longview. Both require large quantities of alder wood. Both have stirred interest among loggers, foresters and landowners as to best methods of harvesting and perpetuating alder. Stumpage prices, too, have zoomed and are the equal of some softwood species.

Western Pine Region

Continued increase in the amount of lumber produced in the Western pine region brought with it increased logging. Besides, the operators are experiencing considerable developmental changes. In some cases its a matter of essential cost reductions, in others the changes result from the introduction of new machines and equipment more suited to the job. Changing markets and standards of utilization also have considerable impact on the loggers.

With view to depicting this situation authoritatively THE LUMBERMAN contacted prominent loggers throughout the region to ascertain their outlook and opinion. Here are some of the more important factors with which they are currently concerned.

ROAD CONSTRUCTION & MAINTENANCE. These prime logging necessities are assuming ever more importance as timber harvesting activities push farther back from the main transportation routes. The advantages of using the new large tractors heads many operators' progress list in the road building line. All the leading logging tractor producers are making their version of these mammoth machines. Observation in the field discloses rapid acceptance accompanied

Volume and Value Cut and Sold by Species
U. S. Forest Service—Region 5—California
Calendar Year 1955

SPECIES	CUT			SOLD		
	Volume M Feet B.M.	Value	Average	Volume M Feet B.M.	Value	Average
Miscellaneous sawtimber species	7,759	$132,308	$17.05	13,325	$217,668	$16.34
Ponderosa and Jeffrey pine	330,311	7,703,373	23.32	445,749	11,361,872	25.49
Douglas fir	233,044	2,496,117	10.71	355,303	4,802,181	13.52
White and red fir	282,460	1,448,387	5.13	291,795	1,925,494	6.60
Sugar pine and western white pine	121,747	3,573,325	29.35	160,772	4,956,114	29.55
Lodgepole pine	1,290	5,113	3.96	1,836	6,027	3.28
Incense cedar	22,513	100,645	4.47	29,321	119,349	4.07
Miscellaneous convertible products	2,178	9,959	4.57	2,531	11,194	4.42
REGION TOTAL	1,001,302	$15,469,227	$15.45	1,300,632	$23,399,899	$17.99

Timber Cut in Forest Service Region 10 (Alaska)
(Thousands of bd ft.)

	Tongass Nat'l Forest[2]			Chugach Nat'l Forest[2]			Total Region 10		
	Volume	Value	Per M	Volume	Value	Per M	Volume	Value	Per M
1949	49,220	$105,294	$2.14	5,910	$8,762	$1.48	55,130	$114,056	$2.07
1950	54,537	120,486	2.21	5,424	5,705	1.05	59,961	126,191	2.10
1951	52,894	147,699	2.79	5,803	7,450	1.28	58,697	155,149	2.64
1952	63,357	204,909	3.23	2,159	7,746	3.59	65,516	212,655	3.24
1953	59,196	201,642	3.41	4,665	16,368	3.51	63,861	218,010	3.41
1954	109,237	299,322	2.74	1,775	5,937	3.34	111,012	305,259	2.75
1955	213,785	491,952	2.30	4,981	16,480	3.31	218,766	508,432	2.32
Av. '51-55	99,693	269,105	2.70	3,877	10,796	2.78	103,570	279,901	2.70

by unusually high satisfaction with these huge tractors.

Other developments in the road machinery line specifically pointed out by loggers as offering operational promise include:

- The application of torque converters on tractors.
- Using rubber-tired earthmovers.
- Rippers and back rippers of various makes and types for mounting on front or rear of tractor.
- Heavy rollers—grid type for breaking and compacting ballast, smooth for straight compaction of both new and old road beds.
- Stump augurs driven by power saw motors to facilitate rapid low-cost stump blowing.

SKIDDING. Progress in this production phase ranges from the new rubber-tired prime movers to wire rope fasteners which eliminate splicing. More operators report logging tree length.

LOADING. Here specific mention as to unit size varies throughout the region; but there's unanimity concerning desirability of the modern tire-mounted mobile loaders which are replacing the stiff-leg boom skidder-loaders quite rapidly.

One operator expresses particular interest in loaders for rapid handling of small pieces; the next one is more concerned with loading a trucktrailer load at a time. But in most any case the loggers ask for "log loading machines built specially (for this job) instead of standard shovels converted to log handling". Log grapples and air-operated tongs appear to be replacing end hooks at an accelerated rate.

TRUCKS. Both large and small operators now give more consideration to having the most appropriate power plant available in their logging trucks. Some advocate torque converters, too. Tires with built-in steel reinforcing are winning advocates.

INTENSIFIED UTILIZATION. Minor species get more attention now than in the past and concern over harvesting windthrown, insect and disease-damaged trees has increased—as evidenced in increasing salvage operations. Besides, more consideration is given to getting the maximum from each tree harvested.

Utilization standards in the woods have in some cases been extended as result of hardboard, particle board, flake board and pulp production. This influence is expected to become of mounting importance, particularly in specific areas.

Bundling logs with steel bands for in-water storage rather than decking not only has its utilization advantages but also finds merit from a cost factor.

Other reported trends of the pine region woods operation: Rising logging costs as result of specifications in USFS sales contracts, overbidding of stumpage by operators, mounting need for larger sales with all-weather roads to extend operating season.

Another trend, of more heartening nature, is the increasing awareness of safety and the resultant benefits derived by all.

British Columbia

Logging trends in British Columbia during the past year were towards increasing mobility in equipment. Partly responsible were these factors: 1. Necessity to get log production at higher altitudes in rugged terrain; 2. Increasing abundance of small logs in the overall supply to the mills; 3. Economic considerations making it worth while to log difficult areas that would otherwise be neglected, at least for the time being.

Generally speaking, weather conditions were not as favorable as in the previous year, but production was well maintained, with pulp mills steadily taking a larger share of the total log supply, even though a substantial proportion of the chip requirements were from material that might otherwise be lost to industry.

Loggers ranged far afield for timber, notably in the case of Columbia Cellulose Co. with large-scale operations north of Terrace in the Kitsumkalum valley. Although the coast continued to supply most of the logs, more and bigger logging operations became active in the interior of the province, where an increasing percentage of tomorrow's timber will be harvested.

ON VANCOUVER ISLAND, more rails were ripped up to be replaced by more flexible truck transportation, but counter to this trend was Canadian Forest Products' construction of 20 miles of logging railroad to by-pass the tow across Nimpkish Lake and the double handling operation which it has involved.

A significant development has been the growing volume of strapped bundles of logs being "driven" down the Fraser River to booming grounds near Yale or further down the river towards New Westminster. This innovation was first described in The LUMBERMAN more than a year ago, but several companies are now making use of the Fraser as a means of transport, although for many years its turbulence deterred exploitation.

Logs are now being bundled and dumped into the river north of North Bend, 150 miles upriver from New Westminster. The logs ride free on the river for 40 miles down the Canyon, through Hell's Gate without damage or delay, and only about 1 percent of the 15,000,000 feet of logs first transported by the river were "hung up". This system is opening up a vast area of timber whose harvesting has been delayed by the high cost of rail transportation, which would be the only reasonable alternative.

Some loggers were going in more and more for portable equipment for yarding and loading as an answer to their operating problem. More porta-

Log Production in the State of Oregon, 1925-54

(All Figures: M Bd. Ft.)

Year	W. Oregon	E. Oregon	Total
1925	2,874,785	957,469	3,832,254
1926	2,907,395	970,443	3,877,838
1927	2,998,395	756,751	3,755,146
1928	3,099,735	903,555	4,033,290
1929	3,465,255	1,064,560	4,529,815
1930	2,208,380	868,225	3,076,605
1931	1,581,214	676,020	2,257,234
1932	1,069,737	393,275	1,463,012
1933	1,574,535	631,820	2,206,355
1934	2,055,186	616,615	2,671,801
1935	2,255,086	1,014,940	3,270,026
1936	2,862,735	1,213,086	4,075,821
1937	3,375,430	1,327,035	4,702,465
1938	2,752,602	1,027,037	3,779,639
1939	3,349,415	1,475,319	4,824,734
1940	3,879,620	1,479,080	5,358,700
1941	5,265,210	1,598,926	6,864,136
1942	5,236,370	1,693,793	6,930,163
1943	5,555,502	1,491,042	7,046,544
1945	4,832,896	1,070,181	5,903,077
1946	5,434,722	1,254,815	6,689,537
1947	6,634,424	1,266,071	7,900,495
1948	7,203,652	1,190,976	8,394,628
1949	5,901,980	814,531	6,874,953[1]
1950	7,180,862	1,101,760	8,454,324[2]
1951	7,219,000	1,514,060	8,733,060
1952	7,718,379	593,668	9,802,471[3]
1953	7,277,341	1,181,265	8,587,160[4]
1954	7,379,467	1,371,879	8,860,735

[1]Includes 158,442 M bd. ft. Indian Service timber
[2]Includes 175,002 M bd. ft. Indian Service timber
[3]Includes 1,490,424 M bd. ft. of federal timber
[4]Includes 128,554 M bd. ft. Indian Service timber

Source: U. S. Forest Service, State of Oregon.

Log Production by Species In British Columbia, 1954-55

Species	Vol. Bd. Ft., 1954	Vol. Bd. Ft., 1955
Douglas fir	1,569,084,852	1,441,258,594
Cedar	604,920,172	557,027,252
Spruce	308,992,061	259,763,514
Lodgepole pine	47,109,995	44,648,971
Hemlock	964,033,103	802,784,952
Balsam fir	268,606,912	218,921,407
White pine	41,096,968	39,356,120
Yellow pine	27,118,746	25,871,122
Cypress	14,093,048	12,780,000
Larch	53,371,494	54,639,813
Hardwood	3,574,272	3,920,955
Cottonwood	4,040,760	7,718,315
	3,906,042,383	3,468,691,362
Total for 1953		4,466,656,905

Source: British Columbia Forest Service

Log Production in the State Of Washington 1925-1954

(All Figures: M Bd. Ft.)

Year	W. Wash.	E. Wash.	Total
1925	5,965,724	467,843	6,433,567
1926	5,921,224	509,295	6,430,519
1927	6,374,402	425,056	6,799,458
1928	6,677,244	467,331	7,144,575
1929	6,828,697	555,509	7,384,206
1930	4,339,661	416,905	4,756,566
1931	3,231,157	345,315	3,576,472
1932	2,042,366	219,945	2,262,311
1933	3,194,327	298,700	3,493,027
1934	3,375,485	308,785	3,684,270
1935	3,352,198	358,380	3,710,578
1936	4,620,331	405,340	5,025,671
1937	4,660,728	445,562	5,106,290
1938	3,036,869	346,586	3,383,455
1939	4,024,835	415,949	4,440,784
1940	4,520,408	463,441	4,983,849
1941	4,649,481	494,535	5,144,016
1942	4,419,359	510,110	4,929,469
1943	4,154,998	478,247	4 633,245
1945	2,979,289	404,524	3,383,813
1946	3,362,702	466,229	3,828,930
1947	N. A.	N. A.	N. A.
1948	3,514,002	598,467	4,112,469
1949	3,307,730	542,798	3,850,528
1950	3,952,960	504,837	4,458,797
1951	4,073,927	603,976	4 677,903
1952	3,582,751	650,022	4,232,744
1953	3,690 477	729,003	4,419,481
1954	3,313,307	685,474	3,998,781

Source: U. S. Forest Service, State of Washington.

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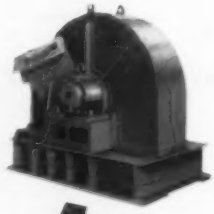
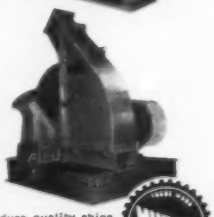
Here is a booklet you should have in your files . . . the most complete and detailed story on pulpwood and wastewood chippers . . . complete specifications of each . . . the sizes in which they are available . . . the uses for each model. We will gladly send you a copy upon request. Write for it today.

MURCO 75" diameter 4-knife mechanical feed wastewood chipper has the spout feed synchronized to the speed of the disc to produce uniform chips . . . can be driven by electric motor or Diesel engine.



MURCO Multi-Knife Wastewood Chipper made in three sizes 56", 64" and 72" diameter discs . . . the most versatile, flexible chipper design now available to chip producers.



MURCO 6-Knife Small Log Chipper for use where production demands are relatively small—made in disc diameters 36", 42", 48", 54", and 60".

Many lumber mills throughout the country now use MURCO Chippers to produce quality chips from planer mill trimmings, slabs, edgings, round wood or veneer cores.

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ble spar trees were being used. "The worst feature of high lead logging is the time taken to rig the tree and get ready for yarding", J. W. Baikie, former president, told the Truck Loggers Association. "This loss of time knocks production per month down considerably and raises yarding costs. The ideal solution would be to retain a system of high-lead and at the same time get away from the stationary spar tree. This can be done by the adoption of portable spars that are quickly moved and rigged. The spar should be made of steel; a spar of 90 feet can be raised and lowered without any difficulty and also quickly."

LOGGERS WERE SAVING time and money by mounting donkey, spar and guy lines on a truck for easy transportation from one setting to another, and devices for tightening guy lines were being improved. With such a yarding setup operating ahead of the loading, conflict between the two was avoided, and yarding was carried on along lines similar to old-style cold-decking except that the logs were alongside the road ready to load out, instead of having to be yarded again.

The most controversial issue facing the loggers last year was, as usual, forest management licenses. The Sloan Forestry Commission was in session again to re-assess the situation that had developed since the original inquiry in 1945, and the industry hoped that its final report would point the way to a pattern of forest management that would be as fair as possible to everyone without disturbing the original principle on which the present system is based—to guarantee sustained yield.

Volume and Value of Timber Cut From Dept. of Interior Lands

	M Bd. Ft.	Value
1940	689,905	$ 1,925,825
1941	849,128	2,272,830
1942	970,863	2,674,692
1943	992,533	3,031,556
1944	902,634	3,368,918
1945	1,048,682	4,294,812
1946	909,131	3,631,169
1947	1,095,305	5,000,549
1948	1,247,683	6,861,057
1949	1,152,655	10,200,539
1950	1,116,009	10,557,521
1951	1,338,722	14,639,221
1952	1,272,772	18,431,724
1953	1,348,711	21,740,662
1954	1,474,088	26,081,583
1955	N.A.	N.A.

(Includes Bureau of Land Management, Bureau of Indian Affairs, Fish & Wildlife Service, Bureau of Reclamation and the National Park Service. In the case of the latter, the data reflect salvage of either burned, bug kill or R-O-W clearing timber.)

Timber Production in State of California No. of Operators

Year	No. of registered tbr. operators	Timber volume cut in bd. ft.
1946	399	.....
1947	790	3,185,995,000
1948	810	3,983,213,000
1949	813	3,795,252,000
1950	989	4,303,011,000
1951	1,052	4,984,288,000
1952	1,228	5,057,036,000
1953	1,487	5,990,088,000
1954	1,599	5,600,210,000
1955	1,768	Not available

Source: State of Caliornia

Timber Production in State of California By Important Counties

Total M bd. ft. of timber
(all products, mostly saw and veneer logs, counties appear in the order of their rank for the 1954 cut)

County	1952	1953	1954
Humboldt	1,060,887	1,324,405	1,264,122
Mendocino	805,437	927,191	993,734
Siskiyou	330,142	380,073	425,187
Shasta	296,864	486,669	347,000
Plumas	419,195	401,504	276,840
Trinity	214,271	319,398	252,061
Lassen	167,224	196,168	241,752
Del Norte	203,835	288,913	240,194
El Dorado	251,101	213,380	150,456
Sonoma	75,677	84,321	133,887
Nevada	103,593	151,017	132,739
Butte	136,523	172,600	129,779
Calaveras	108,157	150,262	128,195
Tehama	71,730	82,868	120,967
Sierra	65,162	99,583	118,598
Tuolumne	143,626	164,829	117,075
Placer	106,424	110,750	110,176

Source: State of California

Timber Production 1952-54 Leading Counties in Oregon

(Note—counties are ranked according to 1954 cut. All counties shown had cuts of over 100,000,000 bd. ft. in 1954.—Ed.)

(All figures—M bd. ft.)

County	1952	1953	1954
Douglas	1,495,855	1,348,416	1,598,258
Lane	1,215,666	1,314,722	1,257,565
Jackson	495,596	455,611	669,968
Coos	713,810	677,218	603,699
Linn	508,806	543,453	539,117
Lincoln	511,593	434,273	404,348
Curry	622,572	348,428	395,254
Tillamook	577,524	483,899	389,907
Clackamas	308,290	389,988	367,177
Josephine	288,572	245,703	282,964
Grant*	121,907	199,049	244,560
Polk	205,084	130,641	197,704
Benton	178,174	175,612	181,791
Klamath*	99,139	153,358	151,729
Clatsop	172,865	153,749	131,987
Lake*	47,800	148,248	125,636
Wheeler*	44,481	113,128	114,126
Marion	93,939	161,791	109,118
Wallowa*	33,093	68,551	108,279
Washington	132,606	138,985	103,557
TOTAL (incl. 16 other counties)	9,802,471	8,587,160	8,860,735

NOTE: State totals include approx. 120 MM ft. of Indian timber.
*Indicates East side of Cascades.
Source: State of Oregon.

Volume and Value of National Forest Timber Cut, 1905-55 (fiscal yrs.)

	1905	1910	1920	1930	1940	1945	1950	1951	1952	1953	1954	1955
Volume of m bd. ft.)	68	379	805	1,653	1,740	3,145	3,502	4,688	4,419	5,160	5,365	6,328
Value of Timber Cut ($1000)	86	906	1,764	4,790	4,807	13,016	30,714	47,816	59,341	70,616	65,407	70,760

Source: Forest Service

Timber Harvests by Regions

FEDERAL AGENCIES ENJOYED record years in sales of government-owned stumpage. Herewith are some year-end reports from the principal regions:

California

Timber operators purchased and cut record-smashing amounts of National Forest timber during 1955. 1,300,000,000 board feet were sold under new contracts and 1,000,000,000 board feet were cut.

The 1955 volume of timber business represents a 20 percent increase over 1954.

Timber cut was valued at more than $15,000,000 while value of the amount sold amounted to more than $23,000,000.

The National Forests of California can continue to produce sawlogs at about the current level, under a program of sustained yield management. This means an annual crop harvest of about 1⅓ billion board feet.

One factor contributing to the large sales volume this year was the urgency for prompt salvage of timber killed by large fires in September. More than half of the merchantable sawtimber killed by the fires has been sold and much of that is already logged and milled by timber operators.

The record cut of timber was produced from 18 National Forests, led by the Plumas National Forest with a cut of 178 million board feet.

Region One (Missoula, Mont.)

During 1955, a total of 970,000,000 board feet of timber products were cut on the national forests of Region One (Montana, northeastern Wash., N. Idaho and northwestern South Dakota). This is the largest annual cut since logging began on the national forests.

The timber was cut from national forest timber sales by logging and lumbering firms. Many of the sales were spruce bark beetle control sales. Of the total volume cut, 434 million or about 45% was spruce.

The purchase value of the material cut amounted to approximately $6,600,000.00.

Intermountain Region

Timber operators harvested a record 270,190,000 board feet of timber from Intermountain national forests in 1955 (Nevada, Utah, Southern Idaho, Western Wyoming).

This is approximately 40,000,000 board feet more than was cut in 1954, nearly a 20 percent increase. The record-breaking cut of timber brought returns to the U. S. Treasury of $2,296,014.

The national forests of southern Idaho contributed 206,055,000 board feet of logs to the 1955 timber harvest; from the seven national forests of Utah came 46,480,000 board feet; two Intermountain national forests in Wyoming, the Bridger and the Teton, yielded 13,604,000 board feet.

Region Six (Oregon & Washington)

The Douglas fir and ponderosa pine regions chalked up a record year on their respective national forests.

Timber sold during 1955 was 2,860,450,000 board feet, up over 1954's 2,404,300,000 feet. Timber cut was 2,729,885,000 board feet, up over 1954's 2,585,792,000 feet. Of this, one quarter billion feet was salvage (dead and dying material).

Value of the 1955 timber cut was $44,582,518, up over 1954's $34,787,611. This was an average of $16.33 per M board feet for all species.

The 1955 cut was 94.5 percent of the allowable annual cut. During the year seven revised management plans for seven working circles (embracing 3.5 million acres, nearly all of it in Douglas fir region) were approved by the Chief Forester. These will increase allowable annual cut 100 million board feet. Reinventory work was started on an additional 1.2 million acres. Goal for completion of all reinventory work is 1960.

Increased allowable annual cut is due to more timber areas becoming operable (new logging equipment and techniques, such as the Wyssen system), utilization of tree species not harvested (subalpine species, etc.) and greater utilization of individual trees.

During 1955 some 18,734 acres were reforested by planting and 2,703 by seeding. Total area to date successfully reforested by planting and seeding is 175,414 acres. Stand improvement work was done on 39,309 acres of young forests; 5523 acres of release thinnings and 33,786 acres of pruning on stems.

The access road program moved along. Built with federal funds were 25.2 miles of mainline roads ($3.97 million), 37.6 miles of reconstruction ($1.88 million), 11 new bridges and 34 replacement bridges.

Operators built 549.2 miles of secondary roads (for $8.9 million), with cost allowances made in timber sales contracts. An additional 205.4 miles were reconstructed (at $2.3 million).

Bureau of Land Management

The value of timber sold from Bureau of Land Management forest lands in fiscal year 1955, ending June 30, 1955, was the greatest in the history of the Bureau. The volume disposed of and the sale value were 763,243,000 board feet of timber and $19,903,301.45, compared to 696,115,000 board feet of timber sold for $12,627,521 in fiscal year 1954.

The sum of $2,500,000 in appropriated funds was expended on the construction of timber access roads on Oregon and California lands in western Oregon. The amount was reimbursed to the Treasury from the counties' share of O&C receipts. These roads are designed to tap a tremendous volume of salvage timber in inaccessible area which would be lost entirely if not salvaged soon.

O & C Lands, Western Oregon

During 1955 calendar year, 603,229,000 board feet of timber was sold from the districts in 344 sales for a total of $21,379,769.60, compared to 1954 when total timber sales brought $15,845,833.04. Average bid price in 1955 was $37.11 per thousand board feet. In 1954, average bid price was $21.76 per thousand, in 1953, $20.36 per thousand.

Total value of blow-down, fire-killed and insect-killed timber sold from the O&C districts in the Bureau's four year salvage program has now exceeded one billion board feet and

Timber Production in State of Washington By Important Counties

Total M Bd. Ft. of Timber (Includes All Products)

County	1952	1953	1954
Lewis	586,560	728,838	574,499
Cowlitz	285,848	439,910	347,400
Pacific	206,645	410,326	209,900
Grays Harbor	423,633	356,041	360,357
Clallam	269,170	337,081	329,635
King	245,258	199,352	198,425
Snohomish	219,494	185,530	164,426
Pierce	233,311	165,212	173,479
Whatcom	150,025	159,524	157,242
Skamania	200,590	155,261	231,177
Skagit	157,439	151,004	106,745
Klickitat	128,742	146,504	135,843
Okanogan	92,817	116,041	123,335
Mason	99,191	107,702	100,862

Pole Production in Northern Rocky Mountain Area, 1951-54

Species	Montana				North Idaho				Northeast Washington				Total			
	1951	1952	1953	1954	1951	1952	1953	1954	1951	1952	1953	1954	1951	1952	1953	1954
W. redcedar	21,013	11,792	4,616	3,092	134,040	151,829	172,225	126,035	37,218	54,100	14,710	9,497	192,271	217,721	191,551	138,624
Lodgepole pine	134,489	104,621	128,523	101,842	41	....	....	....	2,098	....	....	....	136,628	104,621	128,523	101,842
Western larch	54,789	56,591	41,198	31,829	56,222	63,323	33,967	5,075	15,321	32,847	15,080	34	126,332	152,761	90,245	36,938
Douglas fir	5,897	8,981	2,793	768	3,038	8,625	723	....	1,181	1,443	....	....	10,166	19,049	3,516	768
Total	216,188	181,985	177,130	137,531	193,341	223,777	206,915	131,110	55,818	88,390	29,790	9,531	465,347	494,152	413,835	278,172
Percent	46.5	36.8	42.8	49.44	41.5	45.3	50.0		12.0	17.9	7.2	3.43	100.0	100.0	100.0	

Source: Data collected by Rocky Mtn. Pole & Treating Assoc. and compiled by Intermountain Forest & Range Experiment Station.

Logging & Timber

One timber sale for 7,002,000 board feet of Douglas-fir received the BLM record breaking bid of $70.00 per thousand.

Forest revenue also increased from the scattered pine forest on public domain lands in central and eastern Oregon. From 61 tracts, 31,171,000 board feet were sold for $872,705.91, an average of $29.83 per thousand board feet. In 1954, BLM sold 25,896,000 board feet for $586,991.57, an average of $22.67 per thousand board feet.

By the end of 1956, it is estimated that 117 miles of mainline logging roads will have been completed. Several large projects were under construction in 1955 and will be resumed in 1956 when weather conditions will permit.

Largest of the timber access road systems is that of the Smith River and Siuslaw River drainages.

National Forests

More than $80 million from the sale of timber, grazing permits, and other land use was deposited by the U. S. Forest Service in the Federal treasury during the year ending June 30, 1955.

This sum ($81,137,294.18), an all-time record, was due largely to an increase in timber sales. The harvesting of national forest timber was stepped up by access roads built into previously inaccessible timber stands. These roads were constructed by timber purchasers and the government. The Forest Service received about $18.75 million from $24 million appropriated by Congress for timber access road construction.

The 1955 timber sale record compares with $68,992,686.38 taken in during the previous year, and $76,505,198.67 collected in the year ending June 30, 1953, the next highest record year.

Largest source of income was national forest timber which brought in $73,186,590.15 in 1955, compared to $61,228,630.51 a year ago. Volume of timber cut was 6.3 billion feet, compared to 5.4 billion for fiscal 1954. Receipts from grazing of livestock on national forests totaled $2,953,700.91 in 1955, a drop from the $3,107,172.23 collected in 1954. Fees from special uses of the forests such as summer homes, resorts, rights-of-way, water rights, and minerals were $1,524,376.20 in 1955 and $1,310,859.76 in 1954.

The Forest Service now has an allowable annual cut goal of about 7.6 billion board feet, exclusive of Alaska. It expects to revise that figure upwards by another billion feet during the next two or three years. A cut of 7.25 billion feet is anticipated for fiscal year 1956, ending June 30, 1956.

In the last three years 4606 miles of road constructed by timber purchasers have been added to the forest development system, with an estimated value of $41.3 million.

Average Selling Price by Products per MBF Calendar Year 1955 U. S. Forest Service—Southern Region (R8)

Forest	Softwood Sawtimber per MBF	Hardwood Sawtimber per MBF	Pulpwood per Cord
Alabama	$30.00	$ 7.97	$ 4.57
Chattahoochee (Ga.)	32.17	20.83	1.93
Cherokee (Tenn.)	25.02	26.77	2.31
Florida	20.16	17.71	4.38
Kisatchie (La.)	26.16	6.68	3.45
Mississippi	39.09	12.60	5.03
North Carolina	20.12	16.10	1.28
Ouachita (Ark. & Okla)	43.14	8.95	4.18
Ozark (Ark.)	32.69	9.93	2.70
South Carolina	33.73	20.49	6.16
Texas	37.63	7.22	2.49
Region Eight	$34.46	$14.23	$ 4.19

Volume Cut and Sold Calendar Year 1955 and Value of Sold per MBF — U. S. Forest Service — Southern Region (R8)

Forest	Cut MBF	Sold MBF	Value per MBF
Alabama	61,152	37,065	$22.87
Chattahoochee (Ga.)	29,143	34,408	24.96
Cherokee (Tenn.)	16,332	34,038	23.47
Florida	59,273	69,832	11.12
Kisatchie (La.)	53,435	55,325	14.93
Mississippi	99,622	117,927	19.80
North Carolina	46,444	43,094	15.64
Ouachita (Ark. & Okla.)	84,941	95,112	33.80
Ozark (Ark.)	35,532	27,702	17.27
South Carolina	33,203	55,824	24.91
Texas	122,657	96,567	24.16
Region Eight	641,734	666,894	$21.64

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Pulpwood Consumption Soars to New High in 1955

By W. S. BROMLEY

MORE THAN 33 MILLION cords of pulpwood were consumed in 1955 setting an all-time high. A per capita consumption of paper and paper board has soared to a new high of 415 lbs. This all-time peak is up nearly 15% over the consumption during the same period in 1954.

The Western Region led the pulpwood consumption by using nearly 19% more wood than was used during 1954. The Northeastern Region's consumption was up 16.7% while the Southern and Lake States Regions averaged an increase of 12½%. Although inventories at the end of 1955 averaged somewhat higher than they did at the end of 1954, in relationship to the increased consumption they appeared in line. Consumer mills increased the consumption of pulpwood by 5% in 1955 and almost 12% as compared to 1953.

Plans for expansion of capacity in the consuming mills during 1956 may add another 1,600,000 cords to the annual pulpwood consumption.

There were no outstanding difficulties on a national scale in procuring the desired amounts of pulpwood during 1955. Reduced inventories, temporary problems in keeping up the desired schedules of buying in the South caused some concern during the last half of 1955. In other regions pulpwood stumpage was available at reasonable rates and labor to produce the volume desired was generally favorable. Efficient use of new tools and mechanization projects has increased the pulpwood production per manhour steadily during the past year.

In summary, pulpwood production and consumption reached an all-time high during 1955, an increase of 15% over a similar period in the preceeding year. In looking ahead for 1956, pulpwood consumption by the mills will probably increase but the percentage increase, if any, will be nearer 5% than the major increase of 15% made during 1955.

Mr. Bromley is executive secretary of the American Pulpwood Assoc., New York. This is his fourth consecutive report on progress in pulpwood in this Yearbook Number.

Pulpwood Production In Idaho and Montana

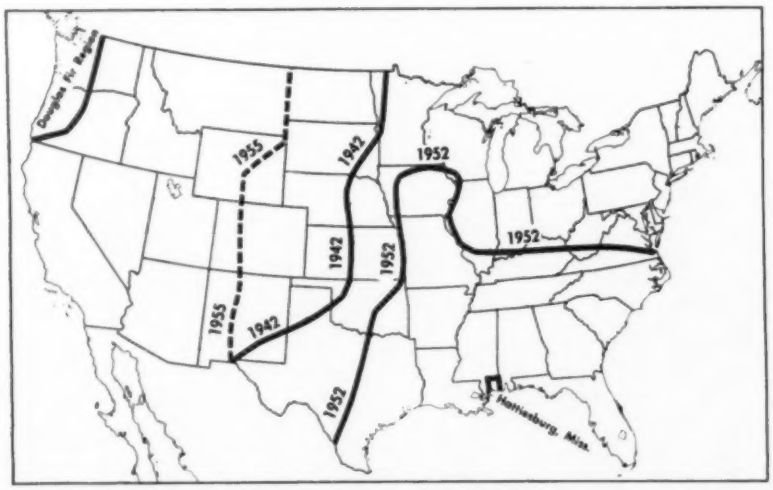
Pulpwood Production In Idaho and Montana

District	Cords	% of total	Change from '52
North Idaho	90,458	61	±3
South Idaho	5,447	4	*
E. Montana	36,060	24	—72
W. Montana	16,115	11	±26
TOTAL	148,000	100	*

*Totals for 1952 and 1954 are not comparable because the 1952 survey covered only northern Idaho.

NOTE: The large decrease in E. Montana was due to a drop of more than 92,000 cords shipped to the Lake States pulp mills. This loss was partially offset by increases in production in North Idaho and Western Montana.

Source: U. S. Forest Service



LINES CONNECTING POINTS of approximate equality of delivered costs per 1,000 board feet for lumber shipped by rail from Douglas fir region and from Hattiesburg, Mississippi, in 1942 and 1952, and a line connecting points of approximate equality of **FREIGHT RATES** (in cents per 100 lbs.) on such lumber. Broken lines designate approximate present (1955) **FREIGHT RATE** equality. The solid lines are of approx. equal delivered costs for 1942 and 1952. Source: Pacific Northwest Business, January 1956. (Pub. by Univ. of Washington.)

Railroad Freight Rates on Lumber Moving to Chicago

(Selected Dates)

Date	Rate from Hattiesburg, Miss. (¢ per 100 lbs.)	Rate from Douglas fir area (¢ per 100 lbs.)	Hattiesburg rate as percent of rate from fir area
Mar. 28, 1938	40.0	76.0	52.6%
July 1, 1946	42.0	80.0	52.5
Jan. 1, 1947	48.0	85.5	56.1
May 6, 1948	60.0	105.5	56.8
Sept. 1, 1949	66.0	111.5	59.1
Aug. 28, 1951	76.0	123.5	61.5

Source: "Pacific Northwest Business," Jan., 1956, compiled from freight rate maps published by WCLA, Portland, and from several appropriate tariffs of the Southern Freight Tariff Bureau, Atlanta, as modified by subsequent ICC decisions. The rate level has not changed since 1951.

Weighted Average Costs of Production in the Southern Pine and Douglas Fir Lumber Industries

(Selected Years)

Year	Southern Pine Costs (Per M Bd. Ft.)	Douglas Fir Costs (Per M Bd. Ft.)	Spread, Pine Over Fir (Per M Bd. Ft.)
1939	$25.04	$19.21	$ 5.83
1946	51.10	37.22	13.88
1948	67.58	55.73	11.85
1950	71.05	55.66	15.39
1952	79.51	66.96	12.55

Sources: Based on "Southern Pine Costs" (SPA) and 1952 Statistical Yearbook (WCLA). Minor statistical adjustments have been made in reported pine figures to make them more comparable to Douglas fir figures. Later costs are not available at the time of preparation, 1955.

Forest Products Zoom In Dollar Value

• Oregon has passed the billion-dollar mark in annual value of its forest products, as indicated in a summary for 1954 released by the Industrial Forestry Association. Latest figures available show a total production that year of $975,639,000, not including wooden boxes, poles, piling, furniture. cooperage, fuel and similar items for which no figures are available.

Gains since 1954 almost certainly have pushed the state's total into the 10-digit classification.

Washington, number two forest products state in the nation, reached a $799,823,000 total in 1954, latest year for which complete figures have been made available.

By major classifications, fir lumber led the Oregon list with a value of $472,180,000, followed by plywood at $192,500,000 and pine lumber at $133,000,000. Washington, by contrast, has become a pulp state.

Other major classifications in Oregon are shingles $5,050,000, fir doors $6,159,000, pulp $90,250,000, paper and paperboard $55,000,000, hardboard $20,000,000 and Christmas trees and greens $1,500,000.

In Washington, the top income producer, pulp, was valued at $297,125,000, followed by fir lumber at $167,020,000 and plywood at $123,100,000. Other major income groups in that state were pine lumber at $65,500,000, shingles $20,200,000, fir doors $10,828,000, paper and paperboard $99,450,000, hardboard $3,600,000 and Christmas trees and greens $4,000,000.

CAMBIO BARKER showing pulpwood going through. Note clean job; spring loaded ends of conveyors.

New Cambio Barker Is Now Being Distributed

• Distribution of its new Cambio barker is being effected by Soderhamn Machine Mfg. Co., subsequent to a period of demonstration at its Talladega, Ala., headquarters. These pulpwood barkers, which were tried out in Sweden for a full year by the parent company, apply an entirely new principle which employs no compressed air nor hydraulics but is entirely automatic. In original tests at Talladega without full set-up of handling, the machine removed both outer bark and cambium at the rate of 15 cords per hour with promise of 30 cords under practical satisfactory handling and feeding.

It barks at the rate of 150 feet per minute. Two speeds are provided, with push button control by the operator. It cleanly barks southern pine and the full range of southern hardwoods. It also has worked successfully on several species of western woods shipped to Talladega for trial.

The barker itself is a packaged unit, including the electric motor. Two conveyors with heavy pulpwood conveyor chain and spring loading for aid in centering are provided, with optional acquisition. The initial Cambio barker takes wood from 2-inch to 14-inch diameter. In process of proving is a larger sized unit that may be used in the already established Anderson debarker as a replacement unit if desired. The barker weighs 3000 lbs. and in Sweden was tried out mounted on a tractor.

Pulpwood Production at Record High During 1955

• More than 33,000,000 cords of pulpwood were consumed in 1955, setting an all-time peak. The figures reflect the fact that per capita consumption of paper and paperboard soared over the 400 lb. total to a new high of 415 lbs. in 1955.

The gains by the pulpwood industry are revealed also in the progress made by the American Pulpwood Association, W. S. Bromley, Executive Secretary, points out. Growth was shown by all membership classes.

The most recent new APA members in the Consumer Class are: Crandon Enterprises, Inc., Ft. Madison, Iowa; East Texas Pulp and Timber Company, Silsbee, Tex.; Georgia Kraft Company, Macon, Ga.; The Buckeye Cellulose Corporation, Foley, Fla.; Weyerhaeuser Timber Company, Tacoma, Wash.

Four new members joined APA from overseas—two companies in New Zealand, and one each in France and Sweden. The ranks of pulpwood producers and subscribers increased by 22 new members.

Bromley said that a Western Technical Committee is due for formation in 1956 as a result of the increased APA membership in the West.

These Are Some Record Stumpage Prices

During the year bidding for timber on national forests set some new high in dollars per thousand board feet. Here are some highlights. Prices include K-V deposits.

California (R5)

There were 144 advertised sales in all, with record high bids in each species as follows:

Ponderosa pine (on the Eldorado forest)—$46.05; sugar pine (Klamath)—$50.00; white fir (Plumas)—$18.00; Douglas fir (Six Rivers)—$39.25; incense cedar (Shasta-Trinity)—$16.00.

Southern Region (R8)

What is believed to be a record price for stumpage was bid for 600,000 bd. ft. on white oak: $147.60 per M. This sale was in December on the Ozark NF in Arkansas. This oak was exceptionally fine and mature and will go for bourbon whiskey barrels.

Southwestern Region (R4)

• The Southwestern Region of the FS (Arizona and New Mexico) had 301,505,000 bd. ft. of timber produced in 1955, the highest cut in 10 years. It was worth $2,393,904.00.

The average stumpage prices and the highs for the year are as follows:

	Average per M	Highest for Year
Ponderosa pine and limber pine	$12.45	$26.55
Douglas fir and Engelmann spruce	5.75	12.60
White fir, cork bark fir and blue spruce	2.45	6.10

Rocky Mt. Region (R2)

Five forests accounted for 60% of the volume. Bidding was not too spirited, compared with some other regions, there being only one or two bids on most sales. Top price bid for Ponderosa pine was $20.20 per M (incl. K-V and slash disposal). Top bid on the combined species of lodgepole pine, Engelmann spruce and alpine fir was $16.60 (incl. K-V and slash).

Intermountain Region (R1)

Species	Average Bid Price	High Bid
White Pine	$35.10	$100.25
Ponderosa Pine	23.75	63.76
Larch—Douglas Fir	8.58	27.50
Spruce	10.29	29.00
Grand Fir—Hemlock	3.29	22.00
Cedar	4.42	15.50
Lodgepole Pine	7.01	26.75
Alpine Fir	2.60	4.50

• Natural gas looks like a "natural" for the Pacific Northwest's plywood plants. However before it is used extensively in dryers converted from other systems, there is a large degree of research needed to determine effect of gas-fired dryers upon veneers and their behavior in other phases of manufacturing, e. g., gluing and pressing.

Fir Region Outbids Pine on Stumpage

• Where does the U. S. Forest Service draw the keenest competition on its timber sales in the Pacific Northwest? In the Douglas fir region west of the Cascades, log-hungry operators often more than double the agency's own appraisals. Bidding is far less hectic in the pine forests east of the Cascades, with a few exceptions. Summaries for the national forests of Region Six, covering Oregon and Washington, for the July-Sept. quarter point of 1955 point up the differences.

On the Mt. Hood forest sale prices and appraisals averaged $42.01, compared with $20.19 appraisal per 1000 bd. ft., on the Gifford Pinchot, $36.78 compared with $15.32; Snoqualmie, $25.64 against $8.97; Umpqua $37.98 against $19.31; Willamette $35.85 against $20.50; Siuslaw, $30.43 compared with $20.33; Rogue River, $26.36 against $17.63. Even the remote Siskiyou averaged $36.71 against $16.34 on the Curry county industry boom. **West side sales averaged $31.06 against an average $18.11 appraisal.**

In the east side pine forests, sales on the Deschutes averaged $13.84 compared with $12.26; on the Ochoco, $19.32 against $18.74; Wallowa-Whitman $17.39 against $16.73; Wenatchee $11.13 against $10.69. On the Fremont, which has a federal unit sales were at the average $16.67 appraisal and also on the Malheur $15.07.

The Umatilla was an exception, at $24.22 compared with $12.84. **Average for all the pine region was $16.71 against the $14.51 appraisal.** During all of the year 1954, the east side averaged $18.91 compared with $16.91, while the west side ran to $15.77, well up from $10.03.

Forests Note Billions Were Cut In 1955

• Timberlands of Oregon fared well during 1955 with low losses from forest fires, increased reforestation of cutover lands, continued battle against insects, and a log harvest expected to exceed 8,000,000,000 board feet.

A total of 1618 fires occurred statewide during the 1955 season. Approximately 821 of these were man-caused.

Oregon led the entire United States in lumber production for the 17th consecutive year and 105,000 persons were employed in or near the woods with trucks, equipment, machines and associated services. The state also topped in plywood production and gained rapidly on leaders in pulp and paper production.

According to the Timber Resource Review, Oregon has 432,000,000,000 board feet of merchantable timber.

Loggers applied for 15,200 logging permits and operated on several hundred thousand acres of cutover and standing green timber. More than 2600 sawmills cut Douglas fir, ponderosa pine, hemlock, red cedar and other species into 6,000,000,000 board feet of lumber.

During the year state forests in the Tillamook burn and Polk county were dedicated in honor of two of the state's outstanding forestry leaders, Nelson S. Rogers, late state forester, and George T. Gerlinger, member of the state board of forestry for more than 30 years.

In the 354,000-acre Tillamook burn forest rehabilitation was reported 37 percent completed. Aerial seeding involved 382,947 acres and 1,000,000 seedlings were planted by hired crews and convicts.

Other developments in the Tillamook burn included a new lookout tower and firebreaks increased to 92 miles.

Estimated Potential Demand for Forest Products in 1975 and 2000 As Predicted by Timber Resource Review

Product	Standard unit of measure	1975		2000	
		Standard units[1]	Roundwood[2]	Standard units[1]	Roundwood[2]
		Million	Million cu. ft.	Million	Million cu. ft.
Sawlogs for lumber[3]	Bd. ft. lumber tally	46,000	7,153	55,000	8,545
Veneer logs and bolts	Bd. ft. log scale	4,500	773	6,500	1,114
Pulpwood[4]	Standard cords	56	4,150	90	6,606
Cooperage logs and bolts	Bd. ft. log scale	400	82		
Piling	Linear feet	40	27		
Poles	Pieces	5	68		
Posts, round and split	Pieces	280	178	Not allocated to product	784
Hewn ties	Pieces	3	19		
Mine timbers, round	Cubic feet	130	130		
Other industrial wood	Cubic feet	280	207		
			711		
All industrial wood[5]	—	—	12,787	—	17,049
Fuelwood	Standard cords	*40	†1,504	*30	†986
ALL TIMBER PRODUCTS	—	—	14,291	—	18,035

[1] Includes net imports and volume of products recovered from mill residues.
[2] Includes roundwood-equivalent of net imports of lumber, woodpulp and paper. Includes roundwood volume cut from dead and cull trees. Excludes volume of products recovered from mill residues. Excludes 1 billion bd. ft. of re-use lumber, 1975 and 2000.
[3] Includes sawed timbers and sawed ties.
[4] Includes pulpwood net imports and pulpwood-equivalent of net imports of woodpulp and finished paper.
[5] All timber products excluding fuelwood.
[6] For industrial as well as home use. Includes mill residues used for fuel.
[7] Includes only the volume cut directly from trees, including dead and cull trees.

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'55 Was Safest Year Yet for Working in Woods

• SAFETY-WISE, THE PACIFIC Northwest Loggers Association continued its battle with Old Man Frequency Rate and was successful in making a still further reduction for the year. Totals at year's end showed that while great progress has been made there is still plenty of room for improvement.

At the PNLA annual meeting early in 1956 six awards for safety in logging were awarded to members of the association.

Winners for 1955 were as follows:

WEYERHAEUSER TBR. CO., Snoqualmie Falls Branch, Snoqualmie Falls, Wash. Frequency 38.41; man hours worked 5,961,1882.

PUGET SOUND PULP & TIMBER CO., Bellingham, Wash. Freq. 60.04; man hours 199,874.

SCOTT PAPER CO., Everett, Wash. Freq. 61.41; man hours 716,514.

U. S. PLYWOOD CORP., Kosmos Div., Kosmos, Wash. Freq. 21.19; man hours 377,553.

PUBLISHERS' PAPER CO., Neskowin, Ore., operation. Freq. 23.16; man hours 43,172.

EAGLE GORGE LOGGING CO., Seattle, Wash. Freq. 41.17; man hours 24,288.

The Forest Products Safety Conference, an industry-wide group for all western U. S. and Canada, is doing a continuing job of safety promotion. Its annual award program takes into consideration all phases of the industry—woods, mills, plywood, pulp & paper. Following awards were made during 1955 for outstanding safety records during 1954 operations:

	Frequency Rate
Fir Logging: Over 250,000 Man Hours	
Weyerhaeuser Timber Co., Springfield, Ore. (1954—Plaque)	22.04
Best 5 year cumulative frequency—certificate Weyerhaeuser Timber Co., Snoqualmie Falls, Wash.	42.21
Fir Logging: Under 25,000 Man Hours	
Crown Zellerbach Corp., Columbia Division (1954—Plaque)	18.70
Best 5 year cumulative frequency Crown Zellerbach Corp., Columbia Div.—certificate	19.84
Pine Logging: Over 250,000 Man Hours	
Edward Hines Lumber Co., Ponderosa Pine Div. (1954—Plaque)	38.77
Best 5 year cumulative frequency Edward Hines Lumber Co., Ponderosa Pine Div.—certificate	33.80
Pine Logging: Under 250,000 Man Hours	
Southwest Lumber Mills, Inc., Flagstaff, Ariz. (1954—Plaque)	52.98
Best 5 year cumulative frequency Cascade Lumber Company, Wash.—certificate	67.63
Sawmill Operations: Over 750,000 Man Hours	
Georgia Pacific (1954—Plaque)	3.31
Best 5 year cumulative frequency Edward Hines Lumber Co., Ponderosa Pine Division—certificate	6.73
Sawmill Operations: 250,000 to 750,000 Man Hours	
Weyerhaeuser Timber Co., White River Branch (1954—Plaque)	10.84
Best 5 year cumulative frequency Weyerhaeuser Timber Co., White River Branch—certificate	12.98
Sawmill Operations: Under 250,000 Man Hours	
Canadian Forest Products, Ltd., Stave Lake (1954—Plaque)	18.65
Best 5 year cumulative frequency Youngs Bay Lumber Co. Inc., Roseburg, Ore.—certificate	65.72
Pulp and Paper Operations	
Rayonier, Incorporated, Shelton Div. (1954 Plaque)	2.20
Best 5 year cumulative frequency Crown Zellerbach Corp., Camas, Wash.—certificate	4.61
Plywood Operations	
Weyerhaeuser Timber Co., Longview, Wash. (1954—Plaque)	4.96
Best 5 year cumulative frequency Weyerhaeuser Timber Co., Longview, Wash.—certificate	10.24

Improvement Award: Greatest reduction in frequency rate over its own rate for the previous year—The Long Bell Lumber Co., Longview Logging Div. (1953 Freq.—113.05 1954 Freq.—18.72 or 83.44% reduction).

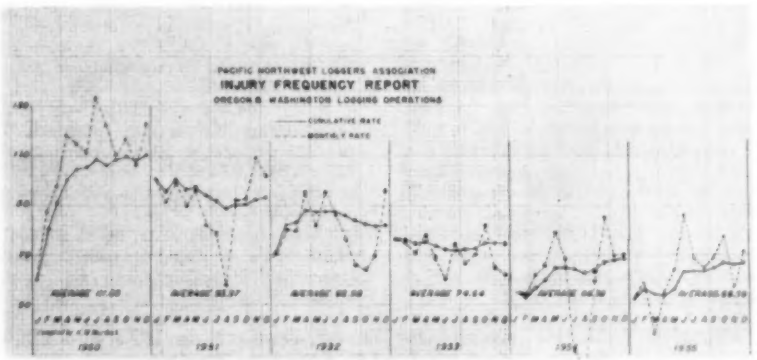
The Forest Industries Safety Committee composed of western industry associations continues to collect statistical data on accident occurrence and hopes to be able to make a public report in the not-too-distant future. The compilation work is being handled in the Pacific Northwest Loggers Assoc. office in Seattle. In general, both fir and pine regions are showing continued improvement, in both woods and mill operations.

Safety Record in the State of California Lumber Industry

Year	Estimated man hours	Disabling injuries	Est. Frequency rate*
1950	106,876,000	8,017	75.0
1951	120,338,000	8,602	71.5
1952	119,855,000	8,055	67.2
1953	119,346,000	7,134	59.8
1954	114,354,000	6,977	61.0

*Frequency rate is the number of disabling work injuries per one million man hours worked. These figures are workers engaged in the manufacture of lumber and wood products (excluding furniture and fixtures).

Source: California Department of Industrial Relations, Division of Labor Statistics and Research



1955 Fires and Their Causes (Presented at Western Forestry Conference, Portland, Ore., Dec. 1955)

States, Districts, & Provinces	LIGHTNING		LOGGING		RECREATION*		INCENDIARY		LAND CLEARING		OTHERS		Total Fires	Total Acreage
	Fires	Acreage	Fires	Acreage	Fires	Acreage	Fires	Acreage	Fires	Acreage	Fires	Acreage		
Oregon	189	.....	53	.....	160	.....	20	.....	68	.....	141	.....	631	21,344
Washington	129	26.30	34	43.90	111	131.90	14	12.10	68	93.80	133	871.00	489	1,179
California	136	20,000.00	132	14,340.00	26	1,000.00	208	23,060.00	324	13,070.00	1,070	90,947.00	1,896	162,417
Idaho	143	189.30	7	43.30	41	190.20	3	11.00	18	154.10	57	464.10	269	1,052
Montana	83	12.00	12	6.00	31	1.00	1	8.00	8	8.00	32	74.00	167	109
British Columbia	418	.....	89	.....	401	.....	15	.....	48	.....	413	.....	1,384	46,697
Region 1	621	481.00	15	31.00	105	1,713.00	1	0.00	18	35.00	45	18.00	805	2,278
Region 5	893	96,168.00	56	1,907.00	229	7,364.00	32	3,878.00	24	13,964.00	222	59,239.00	1,456	182,520
Region 6	620	13,395.00	20	5.00	240	192.00	1	0.00	27	8.00	102	2,579.00	1,010	16,179
TOTALS	3,232	130,271.60	418	16,376.20	1,344	10,592.10	295	26,969.10	603	27,332.90	2,215	154,192.10	8,107	433,775

* Includes smokers.

"UNIPOWER" winching out from stump (at left). Shown at right, a Foden truck with Dyson trailer—24 tons. Unit equipped with Gardner 8 cyl. diesel. This equipment is in use at the British North Borneo Timber Co., Ltd., N. Borneo.

Logging in North Borneo

Reported from Sandakan by A. W. MACPHERSON

• A combination of American and English equipment is in use by the British North Borneo Timber Co. Ltd. in its tropical rain-forest logging operations.

One of the more interesting pieces of equipment is the "Unipower" four-wheel-drive rubber-tired tractor. The 68 hp machines both yard logs and haul trailers.

Mechanical details of this machine are:

Transmission. Single plate clutch into a 5 speed box, thence to auxiliary gearbox with 2 ratios, giving 10 speeds forward and 2 reverse. Lowest ratio is 91.64 to 1. Front and rear axles are each of 5 ton capacity, with ratio of 6.33 to 1.

Brakes. Front 16" x 2½", rear 16" x 3½" —Clayton Dewandre Servo. Trailer brakes also vacuum Servo. Tires are 11.00 x 20.

Steering. Heavy duty Marles cam and roller type.

Tractors are fitted with single drum winches. A heavy duty spade type anchor is hinged at the rear of the tractor; when hauling all but the lightest loads it is necessary to use it.

The tractor is not a high capacity machine. It can winch out, parbuckle onto a trailer and transport to the log pond. Trailers are a 15-ton capacity pole-type running on 14.00 x 20 tires.

The tractor will negotiate 3 percent grades with a full load of 15 tons.

The Unipower has distinct possibilities for re-log or clean-up operations, particularly for the small operator.

The company is now a complete crawler operation—using 3 International TD-24's each with Isaacson blades, winchoists and arches. Logging area is good and flat but like most tropical set ups, is never dry. Tree length logs are yarded to a landing, where they are barked and bucked. Loading is by a double drum winch through an "A" frame; this method is inexpensive and gains in economy what it loses in volume efficiency. Log trucks are of UK manufacture—Foden 6 wheelers with Dyson trailers. Capacity is 24 tons, bunks are 8 feet; being changed to 9-foot stake type bunks. Trucks are powered by 8LW Gardner Diesels developing 150 BHP at 1,700. Tires are 11.00 x 20.

Road pioneering is by a TD.24 with Isaacson angle blade. Final grading is handled by an Aveling-Austin 99H Grader (similar to Austin-Western). Three Foden Trucks (Gardner 6LW's giving 112 BHP at 1,700) and 2 Ford 4 yard trucks handle crushed rock which is produced by a 26" x 15" jaw crusher. Roads are rolled before and after rocking.

Forest Fires on O&C Land

Forest fires on the O&C lands of western Oregon in 1955 were larger, greater in number and much more destructive than in 1954. The area is administered by the Bureau of Land Management.

Reported were 37 fires which burned 3,600 acres of O&C forest lands causing an estimated damage of $530,000. Salvage of the fire-killed timber will eliminate most of the damage. Lightning set 19 of the blazes and 18 were man-caused, 9 of which were started by lumbering, an increase of 5 logging fires over 1954. There was a small decrease in the number of fires set by smokers and debris burners. Two of the largest fires of the season on O&C lands were started by broken power lines.

In 1954 there were 21 fires in the BLM forest districts which burned only 174 acres causing $1,800 damage.

BLM protects approximately 20 million acres of range, woodland and scattered forest land in the counties east of the Cascades of which more than 6 million acres are private lands and state-owned school lands. During the 1955 fire season 15,735 acres were burned in the grazing districts.

Forest Fires on National Forests

Forest Service field offices reported 8,160 forest fires on Federal and other lands within the national forest boundaries during 1955. This represents a drop of more than 20 percent from the 10,462 reported during 1954.

Man-caused fires dropped correspondingly from 5,978 in 1954 to 4,375 in 1955. The area burned, however, increased from 142,253 acres in 1954 to 365,905 acres in 1955.

Largest area burned was in the California region where 183,525 acres were swept by fire. In 1954 this region reported 46,753 acres burned. The Southern region, made up of 11 States (North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma and Texas) reported 116,931 acres burned in 1955 as compared to 53,255 acres in 1954.

Generally, the increase in acreage burned was caused by prolonged hot dry spells which created extreme forest fire hazards. When fires break out under such conditions, control is difficult and costly.

1955 FIRE LOSSES (Preliminary)

District	Timber Burned (MBM)	Timber Salvable (MBM)	Average Acreage per Fire
Oregon	.....	.....	33.82
Washington	100.70	56.00	2.43
California	760.00	486.00	86.00
Idaho	20.00	.....	3.94
Montana	10.00	2.00	0.60
British Columbia	6,439.00	1,735.00	33.74
District 1	746.00	46.00	2.82
District 5	640.90	487.50	125.36
District 6	36.00	28.80	16.20
TOTALS	8,752.40	3,341.30	

Net Loss 5,411.10 MBM

Montana Christmas Tree Annual Shipments, 1936-55

• More than 3.4 million Christmas trees were shipped from Montana in 1954. This is a new record for the Montana Christmas tree industry and exceeds the previous peak year of 1946 by 6%. The unusually mild, dry weather during the cutting period no doubt facilitated the record shipment.

Major customers again were Texas, Iowa, Missouri, Oklahoma and Illinois. California increased its intake from 57,000 trees in '53 to 166,250 in '54.

	Trees Shipped		
1936	1,242,500	1946	3,299,400
1937	1,534,500	1947	2,515,640
1938	1,676,000	1948	3,098,886
1939	1,967,350	1949	3,256,956
1940	2,338,350	1950	3,017,780
1941	3,082,650	1951	3,084,540
1942	2,203,750	1952	2,644,600
1943	3,102,480	1953	3,020,281
1944	2,755,750	1954	3,482,368
1945	2,723,500	1955	*3,200,000

*Estimate only, based on incomplete report.
Source: U. S. Forest Service.

Logging & Timber

Russia Practices Full-Tree Skidding in Logging

IN A TREATISE on full-tree logging prepared recently by Alexander Koroleff, consulting forester for the Pulp and Paper Research Institute of Canada, reference is made to some of the methods practised behind the Iron Curtain.

In Russia, both skidding tractors and cable skidders are used extensively in full-tree skidding, on distances up to one-eighth of a mile and sometimes up to one quarter of a mile or more, according to Koroleff, who has closely followed the trends in Russian logging methods.

Tractors have been expressly designed for timber skidding in Russia, where spruce and fir lend themselves particularly to the full-tree method, usually better than pine. Good results have also been obtained with birch, poplar and a number of other species, provided that the timber is not overmature and the branches not too widespread or brittle.

"Russian full-tree loggers seem to think that, as a rule, it is easier to move unbranched trees with their tops rather than their butts forward, especially if they have downward sloping branches, as is usual with spruce and fir," reports Koroleff.

RUSSIAN FULL-TREE LOGGERS strive to dovetail felling and skidding by accurate directional felling, which calls for an assistant, equipped with a long pushing pole, for each cutter, and by having felling and the preparation of the load for skidding (choking) done by the same workers; also by paying the workers engaged in felling and skidding on the basis of their total production in this work.

Usually only as many trees as are required for a load (often 5-10) are felled at a time, so that the work of load assembly is kept to a minimum. In some cases trees are dropped upon a long choker, with a hook at one end and a ring at the other, tree tops together. In skidding with tree tops forward, chokers are attached at a point where the top is strong enough not to break off.

Clear-cutting greatly predominates in Soviet Russia. The provisions for natural or artificial restocking of the cutovers vary in Russia. With full-tree tractor skidding, cutting blocks are worked usually in strips, with branch and main skidding trails joining in herring-bone fashion. With cable skidders, used frequently in pairs, cutting and skidding are conducted on long, narrow sectors, radiating from the landing.

Apparently a good deal of logging residue is being used for power generation via producer gas, for skidding tractors, cable skidders, trucks and some other machinery, or by producer gas and electricity for portable, semi-portable or permanent power stations for use in logging.

Extent of mechanization in the woods practised in Russia was as follows in 1953, with the objective for 1955 in parentheses: Felling, 80 percent (100); branching, 35 percent (80); skidding, 70 percent (90); loading—at upper landings for hauling by narrow gauge railroads or tracks, 60 percent (90); hauling, 75 percent (90).

ON LEVEL OR ROLLING ground, selective cutting accounts for barely three to five percent of the total. Clearcutting is frequently done in strips of considerable width (up to 1,600 ft), the re-stocking to be obtained either naturally or artificially. When seed trees are left, they are generally in groups. On steep slopes clearcutting is not generally practised. In clearcutting, lightweight, electric (high frequency) chain saws are used, and the handling of the thin feeder cables presents no difficulty. However, in selective cutting, mostly on steel slopes, gasoline-operated saws of much greater weight (29 lbs) are used.

Full-tree skidding predominates, with the tree-length method occupying second place. Tree branching and bucking at the stump is steadily declining. It is estimated that in mechanized operations at least 50 percent of all timber is skidded with crowns on to the upper landings located at truck roads or logging railroads. Most of the skidding is done with KT-12 tractors on distances usually under 1,000 feet, with loads averaging about 8 tons, tops forward. All K-12 tractors operate on producer gas.

Liquid fuel still provides about 50 percent of the power for logging machinery operation, the other half being from fuelwood. Electrification of logging continues to increase, with the principal dependence on mobile electrostations.

In order to operate more complex logging machinery, forest workers are required to have at least seven years schooling. Then they receive three to twelve months technical training and must pass examinations. Their earnings are at least double those of the workers having lesser responsibilities. Machinery is owned by the Ministry of Forest Industries.

In a typical full-tree logging operation employing about 1,000 persons, about 700 or 800 of them live with their families at the lower landing in a semi-permanent forest community established for a period of at least 30 years. Only the remaining 200-300 workers stay in two or three logging camps at the upper landings. These camps are usually moved every five years or so.

Imports From U.S.A. Into New Zealand

Volume in Board Feet

Species	1953	1954	1955 (9 Mos.)
Redwood	370,000	1,295,972	1,027,868
Douglas fir	20,015	3,128,136	2,739,763
Western Red Cedar	8,032	270,841	443,149
Hickory	4,808	8,537	....
Hemlock	5,064	....	....
Sugar Pine	3,137	12,049	....
Mahogany	300	....	....
Balsa	....	2,606	....
Walnut	....	14,761	....
Oak	....	....	12,348
Other	2,006	542	60,151
Total	413,362	4,733,444	4,283,279

Note: This table was supplied through the courtesy of N. Z. Forest Products Limited, Auckland, N. Z.

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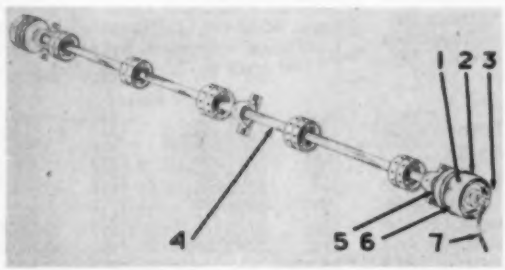

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Vigorous red cedar shingle industry records 10 per cent production increase

IN YEARS WHEN HOUSING starts keep at the healthy high levels, the red cedar shingle industry of U. S. and B. C. fares exceptionally well, and that in essence is the story of 1955. The Red Cedar Shingle Bureau, with headquarters offices in Seattle and in Vancouver, B. C., estimates that the industry produced an estimated 10% additional volume last year over 1954. (Note table in this section.)

Statistics show 1954 was an excellent year, too, with an approximate 10% increase in production over 1953. However, the shinglemen are not satisfied to coast along taking their slice of the building pie as it comes. They are vigorously promoting greater use of "Certigroove" shakes on the sides of the nation's homes as well as "Certigrade" shingles on the tops.

Also, along with other branches of the forest industries, shinglemen are making an effort to tap the vast market of older homes which are in need of repair and modernization.

THROUGH THE MEDIUM of field men who are constantly contacting the nation's specifiers of building materials, i.e., architects, designers and builders, the facts about red cedar shingles are becoming better known each year. Many other advertising and promotional activities are carried on as well.

Cedar shingles for roofs have traditionally been more popular on the west coast, the mountain states and in the Gulf Coast region. The smallest percentage of shingle roofs is found east of the Mississippi; however, in recent years the percentage in the east has been slowly increasing.

On exterior walls, however, New England has a heavy use of red cedar shingles. Otherwise, use of the product for walls is well distributed geographically.

THESE FINDINGS MENTIONED above are the results of recent surveys covering only homes built for owner occupancy and not for speculatively built homes, so they cannot be interpreted as 100% accurate. In general, however, the survey indicates that the use of red cedar shingles has been maintained rather steadily.

The industry, mindful that its success depends heavily upon the limited supply of red cedar logs, is undertaking steps to insure more effective utilization of its raw materials through new research. It is also a striving to continually improve its product quality through the well-established voluntary, rigid program.

Several new members joined the Bureau in 1955. One hundred and twenty four mills and 623 upright machines are represented. Twenty-five plants now make machine grooved Bureau-affiliated.

OF THE PRODUCTION in British Columbia, an estimated 75% is exported, with the U. S. being by far the best customer. During 1955 B.C. mills shipped approximately 2,500,000 squares outside the province (based on figures for the first 11 months of the year.) An estimated 500,000 squares were consumed within Canada. Based on these figures, B.C.'s total production for 1955 is estimated at around 3,000,000 squares.

The Hand Split Red Cedar Shake Association became affiliated with the R.C.S.B. during 1955. The Bureau is handling the inspection and promotion program for handsplit shakes, using the Bureau-owned trade-name of "Certi-Split." Forty-six mills are represented.

Production of Red Cedar Shingles and Shakes in U. S.

Years	(in squares) Shingles	Shakes
1937	5,279,349	.....
1938	5,891,882	.....
1939	6,210,102	.....
1940	5,791,675*	.....
1941	5,674,244*	.....
1942	5,007,362	15,264
1943	3,450,529	2,961
1944	3,242,699	4,163
1945	2,838,572	8,459
1946	3,177,771	29,693
1947	3,737,104	65,706
1948	3,315,364	106,519
1949	2,984,388	103,670
1950	3,490,614	148,315
1951	2,825,290	147,984
1952	2,695,180	175,788
1953	2,577,849	227,706
1954	2,835,633†	284,732
1955	3,119,229†	not available

*Includes shakes.

†Estimates by THE LUMBERMAN based on overall appraisal of profits and production by red cedar shingle mills. An estimated increase of 10% production has taken place during each of last two years.
Source: Census Bureau.

B.C. Shingle Production

• Shingle manufacture is one phase of British Columbia's forest industry that does not vary much from year to year in volume of production. While the value of this production has climbed over the years, this has been primarily due to the general trend towards rising prices.

Unlike lumber, pulp and paper, plywood, etc., there has actually been a decline in the output of shingle mills in British Columbia during the past two or three years. The best postwar year was 1950 with a production of more than 3,000,000 squares. In 1954 the figure was down to 2,668,000 squares and there was a slip still further to 2,516,362 in 1955. Fifty-four shingle mills operated in 1955, the same number as in 1954.

The problem of the shingle industry continues to be a marketing one, complicated by competition of other forms of roofing. U.S. exports account for about 85 percent of B.C. sales, as they have traditionally for many years except during World War II when 30 percent of the production was arbitrarily earmarked for use in Canada.

The industry plans an aggressive advertising campaign aimed at the Canadian prairie market and it is hoped to find a profitable outlet for lower grades in that region, where sales were curtailed last year owing to the market uncertainty facing wheat farmers.

B.C. operators have joined the recently organized Hand Split Shake Association, and production of hand split shakes is expected to assume important proportions. Shake equipment is being installed at several mills, and this form of utilization may assist in the salvaging of logged off cedar stands. Another development has been increased production of squared and rebutted shingles with sanded face.

Sawn Shingle Production, B. C.

	Squares		Squares
1940	3,301,108	1948	2,833,233
1941	3,727,145	1949	2,688,633
1942	3,250,825	1950	3,074,210
1943	2,118,258	1951	2,866,684
1944	2,301,408	1952	2,330,207
1945	2,330,276	1953	2,500,000
1946	2,349,656	1954	2,668,956
1947	2,845,182	1955	2,516,362

Source: B. C. Lumber & Shingle Mfrs. Assoc.

THE NEW HOMES market continues to account for the lion's share of the production of red cedar shingles by mills in the Pacific Northwest of the U.S. and in British Columbia.

SMALL OWNERS increase rolls of national Tree Farm Program to learn timber management.

Tree Farms Increase Acreage

Interest in timber growing program is increasingly stimulated by many sources

THE AMERICAN TREE FARM SYSTEM of private woodland management gained 4,145,946 acres in 1955—a record spurt since the program was launched 15 years ago.

Certified Tree Farm acreage in 40 participating states totaled 37,838,910 on Jan. 1 as compared to 33,692,964 acres a year ago, according to American Forest Products Industries, Inc., national Tree Farm sponsor.

Georgia moved into national leadership during the past year, adding 1,105,539 acres for a Jan. 1 total of 3,734,284 acres. Texas is in third place with 3,370,099 acres. Oregon is second with 3,426,792 acres; Alabama, fourth, 3,307,217 acres.

Mississippi leads in the number of certified Tree Farms, 826. Texas is second with 779 and Alabama third with 578.

Four more states launched the Tree Farm program in 1955. They were Kentucky, Iowa, Illinois and Utah. Wisconsin, which had restricted the program to industrial holdings, expanded it to include all classes of private ownership. Launchings for 1956 are planned in Vermont, Connecticut, Indiana, New York, Delaware and possibly Oklahoma.

FARMERS AND OTHER OWNERS hold 61 percent of the nation's total commercial forest area. The government owns 26 percent and industries own 13 percent.

More than 500 private foresters are now working on Tree Farm inspection work in the U. S. This cooperation is largely responsible for the fact that 1955 was the greatest year in the history of the Tree Farm Program. Much greater progress is expected in 1956. Already in February the 38,000,000 acres mark was passed. Tree Farm launching dates have been scheduled in May for Vermont and Connecticut. Launchings in New York and Indiana will follow shortly thereafter. Preliminary work has been completed for the initiation of the Delaware Tree Farm Program.

National advertising is doing much to step up interest in Tree Farms. AFPI's new publication, "This Is Tree Farming," has been so enthusiastically received that the initial printing of 100,000 copies is already practically exhausted, and a new printing has been ordered.

The AFPI sponsored Keep America Green Program, launched in 1941 in Washington, still operates in 34 states. During the past year, special emphasis was given to areas where bad fire situations developed, and more than 2,000,000 pieces of Keep Green literature was distributed throughout the nation. Many new materials for the Keep Green Program are planned for 1956.

AFPI HAS BEEN NATIONAL coordinator on this program since 1944. Forest Facts books have been published by AFPI for these states: Alabama, Arkansas, California, Delaware, Florida.

Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, New Hampshire, New York.

North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin.

Tree Farms in Canada

Tree farming continued to make progress in Canada. Total acreage involved throughout Canada was approximately 327,800, of which 191,594 was in British Columbia. The Canadian Forestry Association and other groups have been successful in stimulating interest.

The association has prepared a brief for submission to the Canadian income tax authorities in Ottawa urging special tax concessions for holders of certified tree farms. If these are granted the movement is expected to receive considerable impetus. The association is also compiling tree farm manuals with case histories of various successful tree farms so as to encourage timber owners to apply for certificates. The manuals will also contain information regarding management and marketing.

The tree farm movement extended to the prairie provinces during the past year. Two certificates were granted in Saskatchewan during the jubilee celebrations there.

The Canadian tree farm movement had its inception in Ontario three years ago. It was introduced into British Columbia in 1954 when the University of British Columbia's 10,000-acre experimental forest at Loon Lake near Haney was officially dedicated as certified tree farm No. 1.

APPLICANTS FOR CERTIFICATES in Canada must supply details of forest cover within the boundaries of their proposed tree farm, including the number of acres of recent cutover and restocking under 10 years; acreage of reproduction from 10 to 30 years old; acreage of second growth 30 to 160 years old; number of acres of old growth and acreage of nonproductive land. Other requirements are similar to those applying to U. S. Tree Farms.

The B.C. tree farm committee of the Canadian Forestry Association has already certified 13 industrial tree

farms with a combined area of 141,467 acres. In Canada as a whole, five provinces—B.C., Saskatchewan, Ontario, Quebec and New Brunswick are now represented in the national tree farm movement. Some industrial tree farms are as much as 75,000 acres in extent. Other types of enrollment include private individuals, clubs, agricultural associations, educational institutions (such as the University of B.C., and municipalities such as Mission, B.C., which received certification last year for 2,710 acres). British Columbia's first municipal tree farm is the 32,565 acre forest of the Victoria watershed on Vancouver Island.

The present program of the University of B. C. forest is aimed at eventual development of a sustained yield production of over 2,000,000 board feet per year. Within the next 25 years this objective will have been met when 100 year-old trees can be harvested in perpetuity at the calculated rate. Two logging operations are currently in progress, one clearing old growth and the other thinning mature trees to release young growing stock. In addition to the logging operations, there are a score of research projects under way.

BIGGEST OF BRITISH Columbia's tree farms is that of Elk Falls Co. with 61,116 acres. The others are:

Greater Victoria Water district, 32,565 acres; Western Forest Industries, 29,534 acres; MacMillan & Bloedel, Ltd., 13,787 acres; University of B. C., 9,774 acres; T. G. Wright, Witherby, 324 acres.

A. E. Marc, 155 acres; Totem Pole & Piling, Ltd., Dome Creek, 320 acres; B. C. Forest Products, Cowichan Lake, 4,420 acres; Canadian Forest Products, Sechelt and Nimpkish, 13,184 acres; F. D. Mulholland, Morning Star, 471 acres.

W. L. Keate, Port Neville, 50 acres; H. R. Nickson, Rexwood, 200 acres; Powell River Co., Gulf Islands, 9,719 acres; McMahon Lumber Co., 125 acres; Sooke Lake Lbr., Leech River, 8,542 acres.

G. E. Bernard, 3,502 acres; Howard Tree Farm, 180 acres; Elton Anderson, Cortes Tree Farm, 510 acres; Western Plywoods, Caribou, 160 acres; G. W. Sidders, Stave Gardens, 92 acres; Norman Jacobsen, Mission, 154 acres; Corporation of Mission, 2,710 acres.

Nation's 1st Tree Farmers

First in the Nation

Weyerhaeuser Timber Co.,
Clemons Tree Farm
(Montesano-Elma, Wash.).....June 12, 1941

First in Western Pine Region

Weyerhaeuser Timber Co.,
Klamath Falls, Ore.....Sept. 24, 1942

First in South

E. N. McCall,
Brewton, Ala. (a farmer).....May 4, 1942
T. R. Miller Mill Co.,
Brewton, Ala. (industrial).....May 4, 1942
Alger Sullivan Lumber Co.,
Escambia County, Ala.....May 4, 1942
Alabama Power Co.,
Birmingham, Ala. .....May 4, 1942
International Paper Co.,
Mobile, Ala. .....May 4, 1942

Liming in Austrian Forests

• Liming of forest lands in Austria has been tried in recent years.

During one year 600 hectares of forest lands were limed, using about 4,000 tons of agricultural limestone for this acreage. These demonstrations were especially effective in persuading Austrian forest owners to adapt this fairly new but successful and desirable silvicultural practice.

U. S. Tree Farm Progress As of Jan. 1, 1956, Showing Number and Acreage by State & Region

STATE	NO. T. F. 1/1/55	NO. T. F. 1/1/56	TOTAL ACREAGE 1/1/55	TOTAL ACREAGE 1/1/56
Alabama	477	578	2,771,618	3,307,217
Arkansas	404	437	3,136,948	3,302,568
Florida	130	165	2,977,030	3,296,585
Georgia	154	271	2,628,745	3,734,284
Louisiana	141	157	1,707,725	1,810,401
Mississippi	520	826	1,208,388	1,827,771
North Carolina	105	124	672,790	960,837
South Carolina	140	170	1,201,343	1,290,540
Tennessee	327	348	484,107	551,497
Texas	636	779	3,429,363	3,370,099
Virginia	123	162	450,056	659,066
TOTAL SOUTH	3,157	4,017	20,668,113	24,110,865
California (Redwood Region)	29	30	218,385	218,705
TOTAL REDWOOD TREE FARMS	29	30	218,385	218,705
Oregon (Western)	99	125	1,757,071	1,948,588
Washington (Western)	147	179	2,658,359	2,697,755
TOTAL WEST COAST TREE FARMS	246	304	4,415,430	4,646,343
Arizona	3	3	875	875
California (W.P.)	155	167	1,592,576	1,635,885
Colorado	5	6	77,700	78,132
Idaho	297	417	832,474	888,496
Montana	51	49	959,343	959,628
Nevada	1	1	12,984	12,984
New Mexico	2	4	80,900	155,900
Oregon (W.P.)	53	65	1,474,317	1,478,204
South Dakota	1	1	20,460	20,460
Utah	0	1	0	2,960
Washington (W.P.)	83	85	601,447	602,988
Wyoming	1	1	40,557	40,557
TOTAL WESTERN PINE TREE FARMS	652	800	5,693,633	5,877,069
Michigan	353	404	674,558	812,383
Minnesota	376	412	421,871	423,871
Wisconsin	12	71	723,643	733,364
TOTAL LAKE STATES	741	887	1,820,072	1,969,618
Illinois	0	17	0	4,979
Kentucky	0	34	0	20,234
Missouri	48	50	102,019	140,937
Ohio	351	381	86,541	94,668
TOTAL CEN. STATES	399	482	188,560	260,818
Iowa	0	6	0	449
North Dakota	98	101	38,290	38,342
South Dakota	86	86	1,879	1,879
TOTAL PLAINS	184	193	40,169	40,670
Maine	76	131	122,064	139,757
Maryland	11	13	3,508	7,949
Massachusetts	58	59	35,798	35,898
New Hampshire	136	183	101,120	112,282
New Jersey	17	16	9,971	9,746
Pennsylvania	262	313	201,720	221,700
Rhode Island	34	34	5,775	5,775
West Virginia	61	72	168,646	181,715
TOTAL EAST. STATES	655	821	648,602	714,822
TOTAL FOR 40 STATES	6,063	7,534	33,692,964	37,838,910

NOTE: The above report shows the **net** gains and **net** losses for the year of 1955.
Source: American Forest Products Industries, Inc.

Industry Continues Expansion

Compilation shows sawmills, plywood plants, etc., built or modernized

New Sawmills, Modernization Programs and Expansion Programs in 1955

ANGELINA COUNTY LUMBER CO., Keltys, Texas. A major rebuilding and modernization program.
ATHENA MILL CO., Athena, Ore. Stud mill.
BERMAN LUMBER CO., New Castle, Wyoming. Sawmill.
BLUE MOUNTAIN CHIP CO., Pilot Rock, Ore. Chipping plant.
BLUE MOUNTAIN FIR PRODUCTS, Rieth, Ore. Sawmill.
C&C TIMBER & CONSTRUCTION CO., Olyeny, Ore. Sawmill.
COOS BAY LUMBER CO., Coos Bay, Ore. Expansion program.
CROWN ZELLERBACH CANADA, Duncan Bay, B. C. Sawmill.
CHIEF JOSEPH LUMBER CO., Joseph, Ore. Sawmill.
DUKE CITY LUMBER CO., Capulin, New Mexico. Sawmill.
H&W LUMBER CO., Laurel, Ore. Sawmill.
HAMER LUMBER CORP., Appalachia, Va. Sawmill.
HAZELTON & SONS, Walla Walla, Wash. Sawmill.
HUBBARD-CREECH TIMBER CO., Ashers Fork, Ky. Sawmill.
KLICKITAT PINE BOX CORP., Goldendale, Wash. Sawmill and box factory.
M&Y LUMBER SALES, Selma, Ore. Sawmill.
MENASHA PLYWOOD CORP., Bend, Ore. Stud mill.
PEARSONS & CROFTS, Panguitch, Utah. Sawmill.
RIVERVIEW LUMBER CO., Piercy, Calif. Sawmill.
ROCKY POINT LUMBER CO., Klamath Falls, Ore. Sawmill.
SMITH-NEILSON, INC., Kettle Falls, Wash. Sawmill.
SIMPLOT-DEVOE LUMBER CO., Chiloquin, Ore. Sawmill.
SOUTHWEST LUMBER MILLS, INC., Flagstaff, Ariz. Planing mill, etc.
STOCKTON BOX CO., Stockton, Calif. Sawmill.
TASMANIAN PULP & PAPER CO., Kawurau, N. Z. Sawmill.
WESTERN STUDS CO., Arcata, Calif. Stud mill.
WESTERN TIMBER PRODUCTS CO., Raton, N. M. Sawmill.
WEYERHAEUSER TIMBER CO., Raymond, Wash. Extensive modernization program.
WHITING BROTHERS, Reserve, N. M. Sawmill.
WRANGELL LUMBER CO., Wrangell, Alaska. Sawmill modernization.

New Plywood and Veneer Plants (Completed or Under Construction)

BANDON VENEER & PLYWOOD ASSOC, Bandon, Ore.
BATE LUMBER CO., Merlin, Ore.
CUSTOM PLYWOOD, INC., Grants Pass, Ore.
CAMAC VENEER CO., Eugene, Ore.
COQUILLE VALLEY LBR. CO., Deadwood, Ore.
COOS HEAD TIMBER CO., Coos Bay, Ore.
DIAMOND LUMBER CO., Tillamook, Ore.
DRAIN PLYWOOD CO., Drain, Ore.
DURABLE PLYWOOD CO., Arcata, Calif.
EVANS PRODUCTS CO., LTD., Vancouver, B. C.
FORTUNA PLYWOOD, INC., Fortuna, Calif.
FIR-PLY, INC., Medford, Ore.
GH VENEER CO., Sweet Home, Ore.
HUB CITY PLYWOOD, INC., Albany, Ore.
HOQUIAM PLYWOOD CO., Hoquiam, Wash.
INTERSTATE CONTAINER CORP., Red Bluff, Calif.
JEFFERSON PLYWOOD CO., Madras, Ore.
THE LONG-BELL LUMBER CO., Vaughn, Ore.
LORENZ LUMBER CO., Burney, Calif.
LACEY VENEER, INC., Randle, Wash.
MULTI-USE PANEL CORP., Eugene, Ore.
NATRON KILNS, Springfield, Ore.
NATIONAL PLYWOOD COOP, Independence, Ore.
POLSON PLYWOOD CO., Polson, Mont.
POPE & TALBOT, INC., Port Gamble, Wash.
ROSEBURG LUMBER CO., PLANT 2, Dillard, Ore.
SAVONA TIMBER CO., Savona, B. C.
VANCOUVER PLYWOOD CO., Springfield, Ore.
WILLAMETTE VALLEY LUMBER CO., Dallas, Ore.
W. A. WOODARD LUMBER CO., Cottage Grove, Ore.
YAMHILL PLYWOOD CORP., McMinnville, Ore.

Hardboard, Particle & Flakeboard Mills

THE LONG-BELL LUMBER CO., Longview, Wash.
NU-PLY CORP., Bemidji, Minn.
PACK RIVER LUMBER CO., Sandpoint, Ida.
PHILIPPINE WALLBOARD CO., Nasipit, P. I.
RODDIS PLYWOOD CORP., Arcata, Calif.
WEYERHAEUSER TIMBER CO., North Bend, Ore.
WILLAMETTE FIBRE & CHIP BOARD, INC., Sweet Home, Ore.
CHIPBOARD PRODUCTS, INC., Grants Pass, Ore.
WASHINGTON NU-PLY CORP., South Bend, Wash.

Volume of Sawtimber on Accessible Commercial Forest Land by Species, Canada, 1953

(Sawtimber is classified as all trees 10 inches dbh and over)

Species	Million bd. ft.	%
Softwood		
Spruce	173,285	30
Jack & lodgepole pine	45,613	8
Balsam fir	85,316	15
Hemlock	94,218	16
Cedar	65,557	11
Doug. fir	49,608	8
Others	17,268	3
TOTAL	530,865	91
Hardwood:		
Poplar (aspen)	28,265	5
White birch	9,353	
Yellow birch	5,710	
Maple	4,284	4
Others	4,195	
TOTAL	51,807	9
ALL SPECIES	582,672	100

Source: Canada Department of Northern Affairs and Natural Resources; table contained in U.S. F.S. Timber Resource Review, 1955.

Production of Hardboard By Countries of the World; U. S. Leads, Sweden Is No. 2

(Suggested formula for converting to square feet basis: 1 metric ton = 2939 sq. ft.)

	1951	1952	1953	1954
United States	312	395	435	447
Sweden	254	186	215	297
U.S.S.R.			70	80
Germany (Western)	88	63	51	64
Australia	26	36	49	62
Canada	59	47	49	49
Norway	46	39	47	52
Finland	54	35	46	63
France	39	38	44	56
Belgium	24	30	34	47
Italy	33	34	34	34
Czechoslovakia		15	20	20
Germany (Eastern)		10	20	25
Poland		15	20	30
United of So. Africa		15	20	25
United Kingdom	14	12	18	21
Austria	14	13	17	24
New Zealand	8	11	12	12
Argentine				15
Brazil				15
Mexico		10	10	15
Spain			10	10
Japan	9	9	7	9.9
Ireland			7.4	9.2
World Totals	**990**	**1120**	**1270**	**1490**

Source: United Nations Food & Agriculture Organization. Note—World Totals include production for a few small producing countries not shown above.

Estimated Value of Production, Including Loading and Freight, in British Columbia, 1945-54

Product	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	Ten-year Average, 1945-54
Lumber	$78,244,000	$87,013,502	$155,761,222	$219,289,000	$206,228,610	$303,384,304	$278,904,266	$280,006,490	$279,979,507	$270,109,948	$215,892,085
Pulp and paper	33,782,000	41,800,555	57,145,678	73,989,000	68,482,241	78,739,573	135,167,761	129,238,520	135,871,797	156,178,180	91,039,531
Shingles	10,544,000	12,946,506	23,625,946	25,094,000	16,881,240	37,502,958	32,537,442	23,878,880	26,700,153	28,077,416	23,778,854
Boxes	7,855,000	8,288,491	10,430,608	6,129,000	4,424,268	3,837,067	4,062,133	2,367,450	1,810,370	1,481,051	4,968,544
Plywood	6,000,000	9,120,000	20,830,000	22,430,000	21,500,000	26,250,000	34,500,000	36,572,000	45,240,000	53,000,000	27,544,200
Piles, poles, and mine-timber	2,986,000	5,125,762	5,225,000	4,158,000	4,470,379	5,127,681	5,805,745	9,540,340	8,646,611	5,087,052	5,617,257
Cordwood, fence-posts, and lagging	2,621,000	2,647,488	2,200,000	1,671,000	2,058,200	2,189,249	2,349,720	2,675,870	2,581,806	2,282,996	2,327,733
Ties, railway	507,000	478,519	580,000	671,000	467,127	281,308	633,089	963,200	669,007	445,777	569,603
Additional value contributed by the wood-using industry	1,500,000	1,700,000	1,600,000	1,800,000	2,000,000	2,250,000	2,812,500	2,530,000	2,530,000	2,530,000	2,125,250
Laths and other miscellaneous products	1,500,000	1,400,000	1,200,000	1,598,000	1,454,000	1,723,616	1,994,340	2,164,000	2,688,007	1,845,901	1,756,852
Logs exported	1,766,000	2,349,280	3,313,672	6,435,000	4,029,069	5,741,784	4,981,597	5,401,410	4,514,777	5,918,306	4,445,090
Pulp-wood exported	25,000	6,787	32,610	29,000	139,200	741,128	99,375	236,900	37,296	85,716	143,301
Christmas trees	271,000	402,056	293,652	470,000	445,965	583,549	939,390	912,700	999,150	968,047	628,552
Cascara bark	54,000	192,421	50,000	23,000	9,250	18,925	20,572	18,130	20,160	12,393	41,885
Totals	$147,655,000	$173,471,370	$282,288,388	$363,786,000	$331,589,549	$468,371,142	$504,807,930	$496,506,550	$512,288,656	$528,022,783	$380,878,737

Wood Products Treated with Preservatives: 1909 to 1954

(In thousands of cubic feet)

PRODUCT	1909	1919	1930	1935	1940	1945	1949	1950	1951	1952[1]	1953	1954
Total	75,946	146,061	332,319	179,439	265,473	279,450	290,556	288,788	302,471	310,928	292,569	250,663
Crossties	62,079	112,704	189,801	103,509	128,000	140,206	120,076	109,498	110,475	125,669	126,892	105,529
Poles	660	6,661	75,258	35,793	74,129	74,391	106,159	109,470	104,056	93,109	73,099	63,873
Lumber & timbers	.....	.....	.....	.....	.....	.....	30,231	32,821	38,457	41,019	40,490	37,006
Piles	4,422	9,169	17,027	8,575	15,660	20,525	10,994	12,282	17,325	16,557	14,328	12,318
Switch ties	.....	.....	14,623	7,836	8,859	9,900	10,863	8,974	10,539	10,724	11,091	7,422
Fence posts	.....	.....	.....	.....	.....	.....	5,940	8,382	8,641	11,197	14,683	15,232
Wood blocks	2,994	4,714	5,012	1,484	2,730	3,294	2,265	2,584	4,837	6,545	3,644	2,768
Cross arms	42	75	1,299	351	675	1,469	1,392	1,812	3,102	1,888	4,311	3,743
Miscellaneous	464	676	10,284	6,207	22,924	19,863	2,636	2,965	5,040	4,200	4,032	2,770

[1]Preliminary

WOOD - PRESERVATION STATISTICS (compiled by the U. S. Forest Service) show that production of wood given preservative or fire-retardant treatment declined slightly during 1954, reports B. D. Howe, pres., American Wood-Preservers' Assoc.

Total volume of wood treated in 1954 was 250.7 million cubic feet, of which 95 percent was treated by pressure processes. The total was down about 1 percent from 1953. An increase of 4 percent over 1953 was noted in the treatment of fence posts.

While the use of distillate coal tar creosote decreased about 16 percent, about 85 percent of all material treated was treated with creosote or a creosote solution. The use of pentachlorophenol increased about 54 percent.

In 1954 the industry consumed a total of 216,376,145 gallons of liquid preservatives and 16,014,690 pounds of solid preservatives.

NEW USES OF TREATED materials are showing up in such fields as light poles for street and highway lighting. Such poles are less expensive than metal poles for first cost, annual cost and installation. A variety of treatments are available, including some which permit painting.

Pole frame buildings also are finding favor. Within the last 10 years the use of pressure treated poles has been almost phenomenal. Advantages are low cost, ease of construction, versatility and flexibility.

Farm buildings of such design began to appear a few years prior to World War II through educational efforts of the Doane Agricultural Service, St. Louis, and others in the mid-continent area of intensive farming.

Working plans and designs also have been developed by many state agricultural colleges and the U. S. Dept. of Agriculture. Since 1945 acceptance of the properly treated wood pole as anchorage and support of permanent farm buildings has become universal through the United States.

BUILDING COSTS, where labor is furnished all or in part by the farmer, usually will range from 60 cents to $1.00 per square foot of enclosed space. Where contract labor is used, costs may fall between 90 cents and $1.40 per square foot.

Treated lumber in homes, particularly in termite infected areas, is proving its value. Demand has given rise to small independent treating plants, particularly in the south. Expansion in this field should be rapid.

Pressure treated material continues to find favor in building new bridges or replacing old ones. Its long life is an advantage. Similarly, treated material is being used more widely on the nation's highways, as guard rails and sign posts.

List of Wood Preservers

Pressure Treating Plants
And Facilities in the West

Managing Company	Plant Location	No. of Cyl.	Max. Lgth.	Facilities
J. H. Baxter & Co.	Alameda, Calif.	2	144'	1, 2, 3, 5, 6
J. H. Baxter & Co.	Long Beach, Calif.	2	137'	1, 2, 3, 5, 6
J. H. Baxter & Co.	The Dalles, Ore.	5	132'	1, 2, 3, 5, 6
J. H. Baxter & Co.	Eugene, Ore.	2	156'	1, 2, 3, 4, 5, 6, 7
Cascade Pole Co.	Tacoma, Wash.	3	70'	1, 5, 6
Koppers Co., Inc.	Everett, Wash.	3	132'	1, 3, 4, 5, 6, 7
Koppers Co., Inc.	Denver, Colo.	2	132'	1, 2, 3, 4, 5, 6, 7
Koppers Co., Inc.	Oroville, Calif.	2	122'	1, 2, 3, 5, 7
Koppers Co., Inc.	Wauna, Oregon	2	92'	3, 4, 5, 7
Koppers Co., Inc.	Wilmington, Calif.	5	132'	1, 3, 4, 5, 7
The Long-Bell Lbr. Co.	Longview, Wash.	2	140'	1, 5, 6, 7
The Long-Bell Lbr. Co.	Weed, Calif.	2	120'	1, 3, 5, 7
McCormick & Baxter Creosoting Co.	Portland, Oregon	3	144'	1, 2, 3, 5, 6
McCormick & Baxter Creosoting Co.	Stockton, Calif.	4	142'	1, 2, 3, 5, 6
J. Neils Lumber Co.	Libby, Montana	2	144'	1, 2, 3, 5, 7
Pope & Talbot, Inc.	St. Helens, Ore.	6	136'	1, 2, 3, 5, 6, 7
Warren Southwest, Inc.	Wilmington, Calif.	3	104'	1, 2, 3, 5
West Coast Wood Preserving Co.	Eagle Harbor, Wash.	6	132'	1, 2, 5, 6
West Coast Wood Preserving Co.	Seattle, Wash.	8	132'	1, 3, 5, 6

Facilities

1—Creosote & Creosote-Petroleum Solutions
2—Penta
3—Water Borne Salts
4—Fire Retardants
5—Prefabricating
6—Tie Boring
7—Kiln Drying

Source: Western Wood Preserving Operators Association

Timber Production in State of California According to District

	Sawlogs & Veneer logs (M bd. ft.)	Piling & poles (pieces)	Pulp wood (M bf)	Total all products* M bd. ft.
North Coast				
1952	2,080,807	19,257	80,121	2,176,330
1953	2,581,811	8,452	54,514	2,644,562
1954	2,594,733	11,131	43,854	2,653,546
Northern				
1952	1,808,999	12,485	4,400	1,816,945
1953	2,180,233	4,452	275	2,182,301
1954	1,892,567	17,831	350	1,982,859
Central Sierra				
1952	852,838	7,404	9,520	863,250
1953	954,842	15,220	6,200	963,834
1954	850,061	58,770	4,100	860,428
San Joaquin				
1952	169,298	.....	.....	169,585
1953	165,268	500	.....	165,376
1954	141,320	.....	.....	141,540
Central Coast				
1952	23,704	110	467	26,005
1953	20,108	.....	3,710	26,601
1954	24,403	.....	2,029	28,320
Southern				
1952	4,298	2,500	.....	4,921
1953	5,983	10,000	.....	7,414
1954	22,520	6,867	.....	23,517

*Includes sawlogs, veneer logs, pulpwood; and piling, poles, fence posts, other split products and fuelwood converted to board feet.

Source: State of California

We manufacture a complete line of

MATER AUTOMATIC SAWMILL MACHINERY

Automatic log hauls, log decks, carriages, turning and lumber handling equipment — designed to decrease costs, increase productivity; engineered for accuracy and safety.

MATER MACHINE WORKS • Corvallis, Oregon

Now! Portaloy rubber covered camel back chain for use in selective transfer handling

Special Non-Marking White Rubber Is Used To Eliminate Bruising • The Rubber Is An Integral Part of Chain

ask for details about this chain. and all portaloy standard chains . . . also rubber covered rolltop

***NOT* AN ATTACHMENT**

- **WILL STAND TOUGH WEAR**
- **ELIMINATES DOWN GRADING**
- **COMES IN STANDARD H-78 AND H-138 CHAIN ON THE FAMOUS PORTALOY STEEL QUALITY CHAIN**

PORTLAND CHAIN MANUFACTURING CO.

IN THE HEART OF THE LOGGING INDUSTRY

4000 N.W. Yeon • Portland, Oregon • CApitol 8-9219

Waterborne Shipments of Lumber From Washington, Oregon, California & B. C. to Various Foreign Markets According to Rank 1951-1955

Rank	1951	Rank	1952	Rank	1953	Rank	1954	Rank	1955
1. United Kingdom	1,071,972,839	1. United Kingdom	845,819,915	1. United Kingdom	545,862,737	1. United Kingdom	761,493,061	1. United Kingdom	649,516,703
2. Australia	195,483,978	2. Africa	145,451,359	2. Africa	165,954,902	2. Africa	239,793,933	2. Africa	237,211,915
3. Africa	168,120,665	3. Australia	91,009,581	3. Australia	134,543,137	3. Australia	194,923,293	3. Australia	224,678,238
4. So. America (W. Coast)	37,551,192	4. So. America (W. Coast)	35,447,582	4. Japan	75,791,902	4. So. America (W. Coast)	29,443,341	4. Korea	42,869,531
5. Israel	31,760,456	5. Arabia	14,410,212	5. So. America (W. Coast)	34,388,659	5. Korea	28,721,800	5. So. America (W. Coast)	32,809,392
6. China, Hong Kong, Formosa	26,504,343	6. New Zealand	12,878,040	6. India	18,679,271	6. Japan	25,488,128	6. Japan	24,114,084
7. South Sea Islands	17,824,668	7. South Sea Islands	12,477,043	7. South Sea Islands	16,254,341	7. New Zealand	16,727,748	7. South Sea Islands	19,731,418
8. Japan	17,077,926	8. Japan	10,654,774	8. West Indies	12,296,912	8. West Indies	12,267,013	8. New Zealand	15,338,273
9. Arabia	14,801,121	9. China, Hong Kong, Formosa	9,542,864	9. Belgium	12,161,494	9. South Sea Islands	10,999,135	9. West Indies	11,177,311
10. New Zealand	13,566,920	10. So. America (E. Coast)	5,693,353	10. China, Hong Kong, Formosa	11,338,463	10. Holland	8,308,329	10. France	8,784,403
11. Belgium, (incl. Holland)	13,514,678	11. Belgium	4,612,408	11. Holland	6,659,610	11. France	8,306,415	11. So. America (E. Coast)	8,602,367
12. So. America (E. Coast)	11,747,264	12. Germany	4,526,007	12. New Zealand	6,169,281	12. China, Hong Kong, Formosa	8,198,081	12. China, Hong Kong, Formosa	8,393,852
13. West Indies	9,976,055	13. France	3,964,953	13. France	5,460,103	13. Belgium	7,416,862	13. Holland	7,452,290
14. India	8,998,473	14. West Indies	3,478,993	14. Korea	4,073,370	14. India	6,799,080	14. Italy	6,325,267
15. Greece	8,210,573	15. Holland	3,405,275	15. Germany	3,714,349	15. Eire	4,588,826	15. Germany	5,922,996
16. Eastern Canada	6,614,549	16. Italy	2,307,106	16. Italy	2,441,594	16. Germany	4,455,887	16. Belgium	4,950,638
17. Germany	5,934,054	17. Denmark, Norway, Sweden	1,779,548	17. Israel	1,987,666	17. Italy	4,044,013	17. Eire	4,326,394
18. France	4,583,961	18. India	1,754,281	18. So. America (E. Coast)	1,657,069	18. Israel	2,430,146	18. India	3,244,288
19. Eire	3,305,476	19. Central America	1,718,870	19. Eire	1,279,600	19. Denmark, Norway, Sweden	1,908,941	19. E. Canada	2,892,658
20. Denmark, Norway, Sweden	2,501,173	20. Israel	1,442,087	20. Arabia	1,189,632	20. So. America (E. Coast)	1,456,288	20. Newfoundland	2,389,241
21. Central America	2,226,075	21. Eastern Canada	1,026,491	21. Denmark, Norway, Sweden	1,075,019	21. Arabia	818,310	21. Denmark, Norway, Sweden	2,161,733
22. Italy	1,682,622	22. Greece	61,212	22. Philippines	1,000,382	22. Eastern Canada	785,441	22. Arabia	2,017,525
23. Mexico	300,411	23. Unclassified	130,582,909	23. Eastern Canada	906,668	23. Greece	586,887	23. Israel	994,649
24. Unclassified	39,141,625	**Total**	**1,344,650,091**	24. Central America	824,409	24. Central America	5,960	24. Greece	286,809
Total	**1,713,401,097**			25. Greece	350,655	25. Unclassified	137,507,442	25. Central America	130,714
				26. Mexico	200,726	**Total**	**1,517,474,340**	26. Unclassified	98,381,208
				27. Unclassified	267,165,667			**Total**	**1,424,703,897**
				Total	**1,333,427,618**				

Source: Pacific Lumber Inspection Bureau.

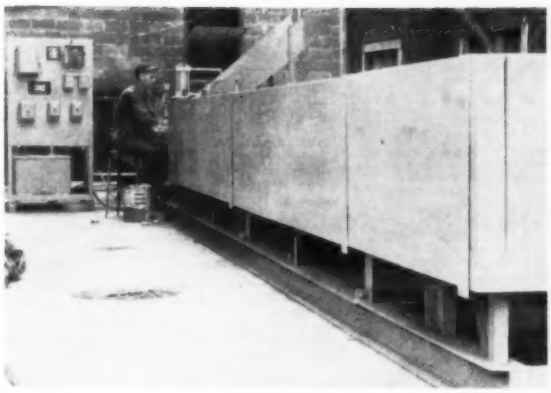
See the NORTHWEST advertisement in the regular MARCH issue of LUMBERMAN

Waterborne Shipments, By District of Origin, 1954 and 1955

District	Export	1954 Domestic	Total
B. C.	1,030,424,038	549,521,392	1,579,945,430
Puget Sound	63,623,422	219,797,470	283,420,892
Grays-Willapa Harbors	69,829,727	178,153,795	247,983,522
Col. River	119,700,005	347,967,210	467,667,215
Coos Bay	195,969,528	600,816,041	796,785,569
California	30,950,294	83,738,692	114,688,986
So. Oregon	6,977,326	107,487	7,084,813
TOTAL	1,517,474,340	1,980,102,087	3,497,576,427

District	Export	1955 Domestic	Total
B. C.	1,016,824,698	395,234,257	1,412,058,955
Puget Sound	50,734,502	265,275,915	316,010,417
Grays-Willapa Harbors	37,212,713	240,748,557	277,961,207
Col. River	119,140,750	322,894,471	442,035,221
Coos Bay	168,742,285	707,464,330	876,206,615
California	28,164,628	108,487,343	136,651,971
So. Oregon	3,884,321	.....	3,884,321
TOTAL	1,424,703,897	2,040,104,873	3,464,808,770

Source: Pacific Lumber Inspection Bureau

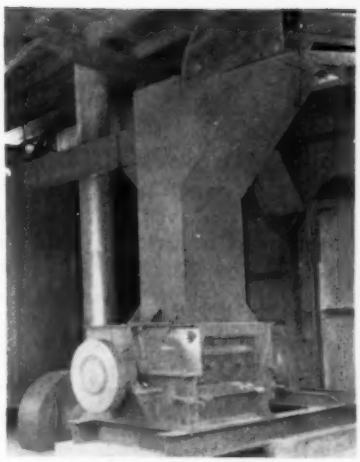


CHIPCRAFT CORP., Morristown, Tenn., recently developed this automatic moulding machine for moulding paper-roll plugs from sawdust or chips. Operator is shown at loading station which forms the plugs. These are cured in oven shown at right.

Company Uses Automatic Moulding Machine

• Developments in extrusion processes and board products thusly produced have ushered into being associated moulded wood specialties. Although the end products may be of little resemblance to boards or panels, the two fields bear rather close inter-relationship because they use raw materials which are almost identical and have processing similarities.

One specific example of accomplishments along this line, Chipcraft Co. has developed an "automatic moulding machine." Dominion Prime Wood Products, Ltd., Lachute, Que., Can., now operates one of these units to produce paper-roll plugs. A second such machine was to have been delivered to Crossett Lumber Co., Crossett, Ark., early this year. It too, is expected to produce roll plugs.



WILLIAMS SWING-HAMMER shredder processing wooden blocks edging strips into suitable form for their own conversion into particle board by Chipcraft process at Fordyce Wood Products Co., located at Fordyce, Ark.

A Look Ahead at Plywood's Future

IN A TALK GIVEN TO the Forest Products Research Society last November, William E. Hunt, U. S. Plywood Corporation, analyzed the long-range outlook for the nation's plywood industry.

Referring to the expected production rates, Hunt said the Stanford Research Institute Report predicted:

- Hardwood plywood production to grow from 1.4 billion square feet in 1952 to 2 billion in 1975.
- Softwood plywood production to grow from 3.3 billion square feet in 1952 to 7.5 billion in 1975.
- Actual production of softwood in 1955 is already over 5 billion feet and in 1956 is expected to rise another 250 million to 500 million square feet. This means that 1956 will see the Stanford production predicted for 1965.

ON THE USES OF PLYWOOD:

- In 1920, the average house used 48 square feet of plywood, in 1933 some 66 feet, in 1940 about 201 feet, in 1950 approximately 642 feet, and in 1953 some 1419 feet. The projection shows 178 feet by 1960, 1960 feet by 1965 and 2500 by 1975.
- In non-residential construction, 83 percent of plywood is used on concrete forms. About 12 percent is involved in trim and cabinet work, while 3 percent goes into wall paneling and 2 percent in miscellaneous applications.
- In 1951 only 11 million feet was used in farm service buildings. This is practically an untapped market.
- Hardwood plywood appears to be four times as important as softwood plywood in furniture and fixtures.

ANALYZING THE IMPLICATIONS in these forecasts, Hunt said:

- More lower grade logs and veneer will have to be used. This is already reflected in the sheathing market.
- More durable overlays must be developed.
- Better patching techniques are needed.

ON HOW TO LOWER COSTS of production, Hunt made these recommendations:

- Develop means of better raw material utilization.
- Develop more recovery of milling residues.
- Lower labor costs by using more machinery.
- Develop methods of lowering cost of usage of plywood in the market place (factory-made parts for roof sections, closet walls, etc.)
- Develop usages for species other than Douglas fir.
- Develop means of using more D-grade veneer on certain types of exterior plywood.
- Raise the production of sheathing grade above its present 30 percent of the entire wall sheathing market.
- Develop more use of plywood for the sub-flooring market, in which plywood now has 25 percent of the total market.
- Lower production costs of sheathing compared to hardboard and insulating board.
- Stimulate more, better and accelerated research in machinery, use of manpower and product development.

Paper-Covered Wood Shows Siding Promise

Paper-covered low-grade wood shows promise of being a good siding material, according to tests made at the Forest Products Laboratory, Madison, Wis.

Research shows that low-grade lumber covered with resin-impregnated paper can be used not only for siding, but for boards for house trim, cabinet partitions, shelving, paneling, and signboards. Similarly, over-laid planks have been successfully used as bleachers in the University of Wisconsin's Camp Randall Stadium at Madison. The overlaid planks have come through two football seasons and exposure to winter snows, spring rains, and summer heat in as good condition as high-grade planks used as a control in this experiment.

The paper cover makes possible the use of cheaper lumber. It masks such lumber defects as knots, pitch pockets, and splits. In tests the paper glued to pine reduced the lateral swelling 25 to 40 percent. When glued on oak, one layer of paper overlay reduced swelling 20 percent; a double layer reduced swelling 35 percent. The use of resin-impregnated paper makes the painting of coarse and defective lumber easy.

Paper covered wood cannot be resawed or planed. Thus its commercial use will be limited to finished products. Furthermore since defects are covered, a user may hit weak spots in the lumber when driving nails.

Complete Editorial Index For The Lumberman—1955

This index covers all 13 issues of THE LUMBERMAN, Jan. through Dec., 1955, including the Forest Industries Yearbook Number of March 25. This is for Volume Eighty-two.

(NOTE: Where the abbreviation "FIYN" appears, refer to THE LUMBERMAN'S Forest Industries Yearbook Number of March 25, 1955.—Ed.)

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Poles Processed in Northern Rocky Mtn. Area From All Sources

NOTE: The number of poles processed as reported in the following table is considerably greater than that shown in the table "Pole Production in Northern Rocky Mountain Area." The number of poles processed is much greater due to shipments into the area from the West Coast of U. S. and from Canada.

Year	Western redcedar	Lodgepole pine	Western larch	Douglas-fir	Total
1947	448,544	375,545	252,205	91,134	1,167,428*
1948	384,837	142,490	103,693	43,231	674,251*
1949	521,847	186,262	143,888	58,606	910,603
1950	418,982	92,338	90,793	14,154	616,267
1951	283,171	136,628	138,852	39,662	598,313
1952	471,104	104,621	213,336	84,777	873,838
1953	443,570	128,818	90,246	13,218	675,852
1954	359,639	44,036	101,842	1,774	507,291
Total	**3,331,694**	**1,210,738**	**1,134,855**	**346,556**	**6,023,843**

*Includes small % of Ponderosa pine.
Source: Data collected by Rocky Mtn. Pole & Treating Assoc. and compiled by Intermountain Forest & Range Experiment Station.

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Major Mergers and Ownership Changes of Companies in the Forest Industries in 1955

Reported by Pacific Northwest Co., 501 Exchange Bldg., Seattle; offices also in major cities of Oregon and Washington.

SURVIVOR OR BUYER	COMPANY OR PROPERTY ACQUIRED
American Forest Products Corp. by sub.	Physical assets of **American River Pine Co.** and **Foresthill Logging Co.** at Foresthill, California.
Buffelen Woodworking Co.	**Buffelen Manufacturing Company,** Tacoma, Washington.
Canadian Chemical & Cellulose Co., Ltd.	Timber rights on 857,000 acres in British Columbia.
Canadian Collieries, Ltd.	**Flavelle Cedar Ltd.,** Port Moody, B. C.; **Timberland Lumber Co., Ltd.,** New Westminster, B. C.
Cascade Lumber Co., Yakima, Wash.	**Longview Fibre Company's** Klickitat County, Washington, timber tract.
Crown Zellerbach	**Bartram Paper Products,** Vancouver, B. C., and **Gaylord Container Corp.**
Cyprus Mines Corp., Los Angeles	**Timber Products Corp.,** Medford, Oregon.
Diamond Match Company	**General Package Corporation.**
Evans Products Company	Gold Beach, Oregon, Indian trust lands.
Fort Vancouver Plywood Company	Certain physical assets of **Vancouver Plywood Company,** Vancouver, Washington.
General Plywood Corp.	Timberlands from **Daystrom, Inc.**
Georgia-Pacific Plywood Co.	Lumber mill and adjacent timber holdings at Swisshome, Oregon, from **Consumers Co-op Assn.**
	Feather River Pine Mills, Inc., Feather Falls, California.
	Granted cutting rights for 50 years covering 7½ billion feet in Alaska.
International Paper Company	30,000 shares of **Hygrade Containers, Ltd.,** London, Ontario.
Kimberly-Clark	**International Cellucotton Products Co.** Invested about $3,300,000 in stock of Coosa River Newsprint Co. (38.8% interest).
Long Bell Lumber Company	**Navasota Creosoting Company,** Navasota, Tex.
M & M Wood Working Company	Merryman tract in Eureka, California, area from **D. D. Bohannon.**
Marathon Corporation	**Dolly Varden Lumber Company's** Rainbow mill.
Mead Corporation	**Manchester Paper Boxes, Ltd.,** Toronto, Can.
Mengel Company	**Chillicothe Paper Co.**
	Equipment and inventory of Knoxville, Tennessee, plant of **O. B. Andrews Co.**
Mohawk Lumber Company	**Fischer Lumber Co.,** Marcola, Oregon.
Myrtle Creek Plywood Company	**Umpqua Plywood Corp.,** Myrtle Creek, Oregon.
Northern California Plywood Corp.	**Paragon Plywood Corp.,** Crescent City, California.
Ohio Match Company	Control of **Harbor Plywood.**
Pickering Lumber Company	**J. F. Ducey's** interest in timber tract.
Puget Sound Pulp & Timber	**Anglo-Canadian Timber Products, Ltd.,** Vancouver, B. C.
	Pollock Paper Corp., Columbus, Ohio.
St. Regis Paper Company	**Schafer Bros. Logging Co.**
Simpson Logging Company	Inventories and fixed assets of **Coquille Plywood, Inc.,** Coquille, Oregon.
Textron American, Inc.	**Aberdeen Plywood's** Tillamook Timber Tract.
Tillamook Veneer Company	Plywood division of **Matapedia Company.**
United States Plywood Corporation	**Muskoka Wood Products, Inc.**
	Plywood, Inc., Green Veneer plant at Anderson, California.

Current Offers or Contemplated Mergers & Acquisitions

SURVIVOR OR BUYER	COMPANY OR PROPERTY
Atlas Plywood	**Plywood, Inc.,** to bring holdings to 85% or more.
Blyth & Co., Inc.	**Dant and Russell.**
	Coos Bay Lumber Company.
Container Corp. of America	**Mengel Company.**
Crown Zellerbach Corp.	**Waxide Paper Company.**
International Paper Company	**Long Bell Lumber Co.**
	Olin Mathieson Chemical Corp., timberlands in Arkansas, Louisiana, and Texas.
Roddis Plywood Corporation	Certain assets of **California Barrel Co.,** Arcata, California.
St. Regis Paper Company	**Rhinelander Paper.**
Scott Paper Company	1,000,000 shares (29% interest) **British Columbia Forest Products.**
Simpson Logging Company	**M & M Wood Working.**
	Northern Redwood Lumber Co.
Valsetz Lumber Company	**Heppner Pine Mills,** Heppner, Oregon.
	Mt. Emily Lumber Co., La Grande, Oregon.
Western Hu-Ply	**Washington Hardboard Co.,** South Bend, Ore.
Western Plywoods Company, Ltd.	**Murray Plywoods, Ltd.,** Vancouver, B. C.
Weyerhaeuser Timber Company	Certain physical assets of **Wirkkala Bros. Logging Co.,** Naselle, Washington.
	Schafer Bros. Sawmill, Aberdeen, Washington, from **Simpson Log. Co.**

Forest Industries Buyers' Guide

An alphabetical, catalogued listing of companies manufacturing the equipment, machinery and supplies and providing services used in the forest industries.

The names of the firms which advertise in THE LUMBERMAN are printed in bold face type throughout the following Buyers' Guide. For further information on any company's products or services, please write to the editor, 71 Columbia, Seattle 4, USA. Every effort has been made to make the BUYERS' GUIDE section as accurate as possible. However, on account of the large number of firms and products involved the LUMBERMAN cannot assume responsibility for any errors or omissions that may inadvertently occur.—Ed.

ABRASIVES
Carborundum Co., Niagara Falls, N. Y.
Macklin Co., Jackson, Mich.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
The Norton Co., Worcester, Mass.; Los Angeles
Simonds Abrasive Co., Philadelphia, Pa.

ADHESIVES
American Cynamid Co., New York City
American-Marietta Co., Seattle, Portland, New Westminster, B. C.
Armour & Co., Chicago, Ill.
Bakelite Corp., New York City, N. Y.
Borden Co., Chemical Division, New York City; Seattle
Catalin Corp., New York City, N. Y.
Monsanto Chemical Co., St. Louis, Mo., Springfield, Mass.
Perkins Glue Co., Lansdale, N. Y.
Quaker Oats Co., Chemical Division, Chicago, Ill.
Reichhold Chemicals, Inc., White Plains, N. Y.; Seattle; San Francisco, Port, Moody, B. C.
Resinous Products Div., Rohm & Hass Co., Philadelphia
Swift & Co., Adhesive Product Division, Chicago

AIR MOTORS
The Eimco Corporation, Salt Lake City, Utah
Gardner-Denver Co., Quincy, Ill.; Seattle; Portland; San Francisco; Denver, Colo.; Dallas, Texas

AIR COMPRESSORS—AIR TOOLS
Chicago Pneumatic Tool Co., Chicago, Ill.
Davey Compressor Co., Kent, Ohio
Gardner-Denver Co., Quincy, Ill.; Seattle; Portland; San Francisco; Denver, Colo.; Dallas, Texas
Ingersoll-Rand Co., New York City, N. Y.
Joy Mfg. Co., Pittsburgh, Pa.
LeRoi Division, Westinghouse Air Brake Co., Milwaukee, Wis.
Quincy Compressor Co., Quincy, Ill.
Worthington Co., Harrison, New York; Portland

AIR TONGS
Berger Engineering Co., Seattle, Vancouver, B. C.

APPRAISALS
General Appraisal Co., Seattle, Portland; San Francisco, Los Angeles, Spokane, Wash.; Vancouver, B. C.
U. S. Appraisal Co., Seattle, Wash.

ARCHES, LOGGING
Garrett, Co., Enumclaw, Wash.
Hyster Co., Portland, Ore.
LeTourneau-Westinghouse Co., Chicago, Ill.; Portland
Pacific Car and Foundry Co., Renton, Wash.; Chicago, Ill.

AXES
Collins Company, Collinsville, Conn.
Fayette Plumb. Co., Philadelphia, Pa.

AXLES
Axle Division, Eaton Mfg. Co., Cleveland, O.
Kay-Brunner Steel Production, Inc., Axle Div., Alhambra, Calif.
Memphis Equipment Co., Memphis, Tenn.
Timken-Detroit Axle Division, Detroit, Mich.
Standard Forge & Axle Co., Montgomery 2, Ala.

BARKERS
Andrus Mfg. Co., Eugene, Ore.
Eureka Boiler Works, Eureka, Calif.
Ederer Engineering Co., Seattle, Wash.
Filer & Stowell Mfg. Co., Milwaukee, Wis.
Hansel Engineering Co., Seattle; Vancouver, B. C.
Improved Machinery, Inc., Nashua, N. H.
Nelson Equipment Co., Portland, Ore.
Nelson Electric Mfg. Co., Tulsa, Okla.
Nicholson Mfg. Co., Auburn, Wash.

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Sumner Iron Works, Everett, Wash., Vancouver, B. C.
Soderham Machine Mfg. Co., Talladega, Ala.
Western Barkers Ltd., Vancouver, B. C.

BATTERIES
Autolite Battery Corp., Toledo, Ohio
Electric Storage Battery Co., Industrial Div., Philadelphia, Pa.
Pacific Battery Mfg. Co., Portland, Ore.
Prest-O-Lite Battery Co., Inc., Toledo, Ohio
Willard Storage Battery Co., Cleveland, Ohio

BEARINGS
Dodge Manufacturing Corp., Mishawaka, Ind.
Fafnir Bearing Co., New Britain, Conn.; Portland
Federal Mogul Corporation, Detroit, Mich.
Graphite Metallizing Corp., Yonkers, N. Y.
Schafer Bearing Div., Chain Belt Co., Downers Grove, Ill.
SKF Industries, Inc., Philadelphia, Pa.
Timken Roller Bearing Co., Canton, Ohio

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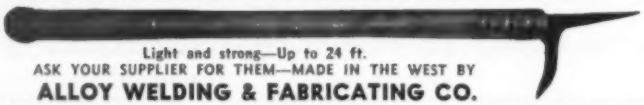

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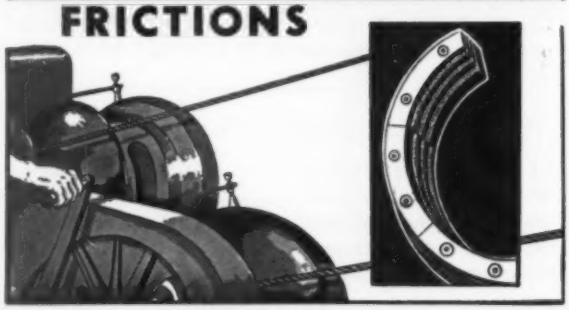

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Degan Belting Co., San Francisco, Calif.
Fort Worth Steel & Machine Co., Fort Worth, Texas
Flexible Steel Lacing Co., Chicago, Ill.
Gates Rubber Co., Denver, Colo.
Goodall Rubber Co., Trenton, N. J.
B. F. Goodrich Co., Akron, Ohio; Portland, Seattle
Goodyear Tire & Rubber Co., Akron, Ohio; Portland, Seattle
Graton & Knight Co., Worcester, Mass.
Hewitt Rubber Div., Hewitt-Robbins, Inc., Stamford, Conn.
Johns-Manville Corp., New York City, N. Y.
Peat Belting & Rubber Co., Seattle, Wash.
Pioneer Rubber Mills, San Francisco, Calif.
Manhattan Rubber Div., Raybestos-Manhattan, Passaic, N. J.
Scougal Rubber Mfg. Co., Seattle, Wash.
Thermoid Company, Trenton, N. J.; San Francisco; Portland; Houston, Texas; Atlanta, Ga.
Mechanical Rubber Goods Div.—U. S. Rubber Co., New York City, N. Y.; Atlanta, Ga.; Portland, San Francisco

BITS and SHANKS
E. C. Atkins Div. of Borg-Warner, Indianapolis, Ind.
Henry Disston & Sons Co., Philadelphia, Pa.; Seattle
R. Hoe & Co., New York, Portland, Birmingham, Ala.
Metal Processing Co., Portland, Ore.
Pacific Saw & Knife Co., Portland
Simonds Saw & Steel Co., Fitchburg, Mass.; Portland

BLOWPIPE SYSTEMS
American Sheet Metal Works, Inc., Portland
Anderson Blowpipe & Mfg. Co., Seattle, Wash.
Archer Blower & Pipe Co., Seattle, Wash.; Portland
Central California Blowpipe Co., Escalon, Calif.
Conveyair Company Ltd., Vancouver, B. C.
Jacksonville Blowpipe Co., Jacksonville, Fla.
The Kirk & Blum Mfg. Co., Cincinnati, Ohio
National Blower & Sheet Metal Co., Tacoma, Wash.
Ohio Blowpipe Co., Cleveland, Ohio
Medford Blowpipe Co., Medford, Ore.
Rader Pneumatics, Inc., Portland, Vancouver, B. C.
Rees Blowpipe Mfg Co., Berkeley, Calif.; Vancouver, B. C.

BOILERS
Gabriel Boiler & Fabrication Co., Portland
Seattle Boiler Works, Seattle, Wash.

BOILER WATER TREATMENT
Coast Neutralizer Co., Portland, Ore.

BOLTS and NUTS
Bethlehem Pacific Coast Steel Co., San Francisco, Seattle, Portland, Spokane, Wash.; Los Angeles, Phoenix, Ariz.; Vancouver, B. C.
Northwest Bolt & Nut Co., Seattle

BOOM and Tug BOATS
L. S. Baier and Associates, Portland
Gunderson Bros. Engineering Corp., Portland
Ilwaco Boat Works, Ilwaco, Wash.
Marine Construction & Design, Seattle
Nichols Boat Works, Hood River, Ore.

BRAKES, Air, Electric
Bendix-Westinghouse Automotive Air Brake Co., Elyria, Ohio; Berkeley, Calif.
Power Brake Equipment Co., Portland
Warner Electric Brake & Clutch Co., Beloit, Wis.
Westinghouse Air Brake Co., Wilmerding, Pa.

BRAKE BLOCKS, LININGS, DRUMS
American Manganese Div., American Brake Shoe Co., Chicago
Champion Friction, Ore., Eugene, Ore.
Gatke Corp., Chicago, Ill.
Gunnite Foundries Corp., Automotive Div., Rockford, Ill.
Johns-Manville Co., New York City, N. Y.
Goodyear Rubber & Asbestos Co., Portland
Raybestos-Manhattan Corp., Grey Rock Div., Manheim, Pa.
World Bestos Corp., New Castle, Ind.

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Canadian Sumner Iron Works, Vancouver, B. C.
Wood Briquettes, Inc., Lewiston, Ida.
Sumner Iron Works, Everett, Wash.

BULLDOZER BLADES
Allied Equipment Co., Seattle, Wash.
American Tractor Equipment Corp., Oakland, Calif.
The Baker Mfg. Co., Springfield, Ill.
Gar Wood Industries, Inc., Detroit
Hyster Co., Portland, Ore.
John Deere Co., Moline, Ill.; Portland, San Francisco
Pacific Car & Foundry, Renton, Wash.; Chicago

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The Enterprise Co., Columbiana, Ohio
Filer & Stowell Mfg. Co., Milwaukee, Wis.
I. W. Johnson Engineering Co., Tacoma, Wash.
Klamath Iron Works, Klamath Falls, Ore.
Klamath Machine & Locomotive Works, Klamath Falls, Ore.
Mater Machine Works, Corvallis, Ore.
Mill Equipment, Inc., Seattle
Monarch Forge and Machine Works, Portland
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Buda Division, Allis-Chalmers Mfg. Co., Milwaukee
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Hyster Co., Portland, Ore.
Pettibone - Mulliken Corp., Chicago; North Hollywood, Calif.
Silent Hoist & Crane Co., Brooklyn, N. Y.
Swing-Shift Mfg. Co., Longview, Wash.
Towmotor Co., Cleveland, Ohio
West Coast Machinery Co., Stockton, Calif.
Yale & Town Mfg. Co., Philadelphia, San Francisco

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Electric Steel Foundry Co., Portland, Seattle, San Francisco, Houston, Tex.; Spokane, Wash.; Eugene, Ore.
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Oregon Steel Foundry Co., Portland
Soule Steam Feed Works, Meridian, Miss.
Western Steel Foundry Co., Seattle, Portland

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Industrial Components, Inc., Portland
Rader Pneumatics, Inc., Portland, Vancouver, B. C.

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Campbell Chain Co., York, Pa.; Portland, Sacramento, Calif.
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Jeffrey Mfg. Co., Columbus, Ohio.; Seattle, Portland
Link-Belt Co., Chicago, Seattle, Portland, San Francisco
Moline Malleable Iron Co., St. Charles, Ill.; Portland, Tacoma
Morse Chain Co., Ithaca, N. Y.; Seattle, Portland
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Seattle Chain & Mfg. Co., Seattle
S. G. Taylor Chain Co., Hammond, Ind.
The Union Chain & Mfg. Co., Sandusky, Ohio
The Whitney Chain Co., Hartford, Conn.

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Republic Electric & Development Co., Seattle
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The Enterprise Co., Columbiana, Ohio
Fort Worth Steel & Machine Co., Fort Worth, Texas
Jeffery Mfg. Co., Columbus, Ohio
Link-Belt Co., Chicago, Seattle, Portland, San Francisco
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Harnischfeger Corp., Milwaukee, Wis.
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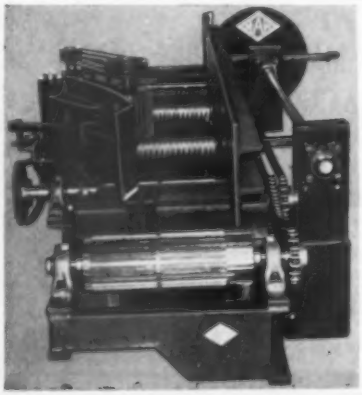

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L-M Equipment Co., Portland, Ore.
Northwest Marine Iron Wks., Portland
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The Oilgear Co., Milwaukee, Seattle, Los Angeles
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Skeen Electric Works, Portland
Vickers, Inc., Detroit, Mich.; Seattle, Portland, Berkeley, Calif.; Atlanta, Ga.; Houston, Tex.
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Wash.
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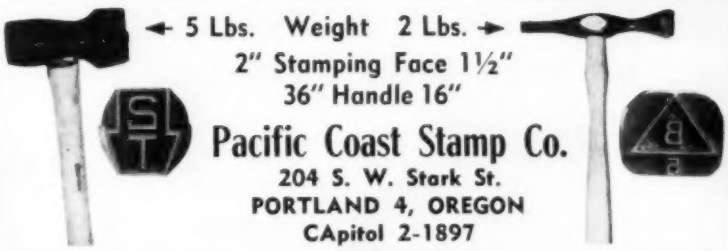

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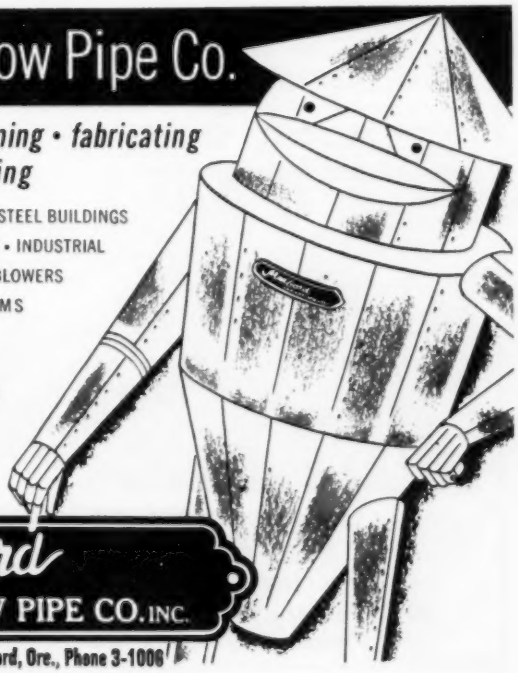

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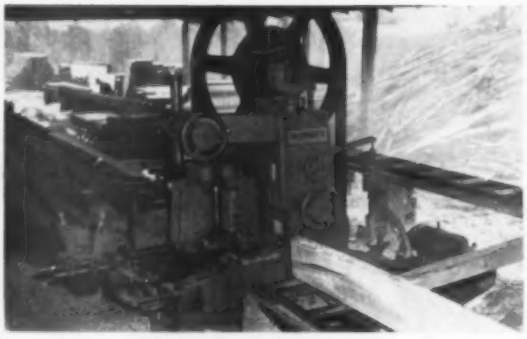

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Mill Engineering & Supply Co., Seattle
Portland Machinery Co., Portland
Preston Woodworking Machinery Co., Preston, Ont.; Vancouver, B. C.
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Vivian Diesels & Munitions Ltd., Vancouver, B. C.
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Ohio Gear Co., Cleveland, Ohio
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Gruendler Crusher & Pulverizer Co., St. Louis, Mo.
Jacksonville Blowpipe Co., Jacksonville, Fla.
Mitts & Merrill, Saginaw, Mich.
D. J. Murray Mfg. Co., Wausau, Wis.
Peninsula Iron Works, Portland
Williams Patent Crusher & Pulverizer Co., St. Louis, Mo.
Sumner Iron Wks., Everett, Wash.

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Aeroquip Corp., Jackson, Mich.; Greensboro, N. C.; Portland, Burbank and Los Angeles; Dallas, Texas
American Rubber Mfg. Co., Oakland, Calif.
Boston Woven Hose and Rubber Co., Cambridge, Mass.
Goodyear Rubber & Asbestos Co., Portland
B. F. Goodrich Co., Akron, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio
Chas. M. Niedner's Sons Co., Malden, Mass.
Pacific Marine Supply Co., Seattle
Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N. J.
Mechanical Rubber Goods Division, U. S. Rubber Co., New York City, Atlanta, Ga.; Portland, San Francisco
Thermoid Co., Trenton, N. J.; Houston, Tex.; San Francisco, Portland, Atlanta, Ga.

INSECTICIDES
Pennsalt Mfg. Co., Tacoma
E. I. duPont, Wilmington, Seattle, Portland

INSTRUMENTS
The Bristol Co., Waterbury, Conn.
The Foxboro Co., Foxboro, Mass.; Seattle, Portland, Dallas, Texas
Instrument Sales & Service, Portland
Minneapolis-Honeywell Regulator Co., Philadelphia
Taylor Instrument Co., Rochester, N. Y.

INSURANCE
Balfour Guthrie & Co., Seattle, Portland, San Francisco
D. K. MacDonald & Co., Seattle
U. S. Epperson Underwriting Co., Kansas City, Mo., Portland

JACKS
Allis-Chalmers Mfg. Co., Buda Division, Chicago, Dallas, Texas; San Francisco, Houston, Texas

KNIVES, planer, hog, veneer, chipper
E. C. Atkins Division, Borg Warner Co., Indianapolis
American Shear Knife Co., Homestead, Pa.
Cascade Saw & Tool Co., Chehalis, Wash.
Bailey & Blendinger Co., Inc., Union, N. H.
Detroit Edge Tool Company, Detroit
Henry Disston & Sons, Inc., Philadelphia, Pa.; Seattle, Chicago
Haywood Cutterhead Co., Seattle
Heppenstall Co., Pittsburgh, Pa.
Jones & Orth Co., Seattle
Metal Processing Co., Portland, Ore.
Ohio Knife Co., Cincinnati, Ohio, Portland
Pacific Coast Knife Co., Seattle, Wash.
Pacific Saw & Knife Co., Portland
Simonds Saw & Steel Co., Fitchburg, Mass.; Portland
Simonds, Worden, White Co., Dayton, Ohio
Spear & Jackson Ltd., Vancouver, B. C.; Eugene, Ore.
Wapakoneta Machine Co., Wapakoneta, Ohio
Wisconsin Knife Works, Beloit, Wis.

LIFT TRUCKS
Buda-AC, Milwaukee, Wis.
Clark Equipment Co., Benton Harbor, Mich.
Gerlinger Carrier Co., Dallas, Ore.
Hyster Co., Portland, Ore.
Ottawa Steel Division, L. A. Young Spring & Wire Corp., Ottawa, Kansas
Towmotor Co., Cleveland, Ohio
Yale & Towne Mfg. Co., Philadelphia

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Homelite Corp., Port Chester, N. Y.
D. W. Onan & Sons, Inc., Minneapolis, Minn.; Seattle; Portland; San Francisco; Vancouver, B. C.
Kohler Co., Kohler, Wis.

LOADBINDERS
Thomas Laughlin Div., American Hoist & Derrick Co., Portland, Me.
American Logging Tool Corp., Evart, Mich., St. Louis, Mo., Seattle, Portland, San Francisco, Houston, New Orleans.
Campbell Chain Co., York, Pa., Portland, Ore., Sacramento, Calif.
The Canton Mfg. Co., Canton, Ohio
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Lebus Rotary Tool Works Inc., Longview, Texas
Mar Hook Co., Aberdeen, Wash.
Ohio Hoist & Mfg. Co., Cleveland, San Francisco.
S. G. Taylor Chain Co., Hammond, Ind.
Young Iron Works, Seattle, Wash.

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Sandvik Canadian Ltd., Montreal, Vancouver, B.C.
S. G. Taylor Chain Co., Hammond, Ind., San Francisco, Seattle, Portland, Denver, Salt Lake City, Utah.

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Thomas Laughlin Div., American Hoist & Derrick Co., Portland, Me.
Anderson Steel Products, San Francisco
Fred E. Barnett Co., San Francisco, Eureka, Ukiah, North Sacramento, Calif.; Portland, Klamath Falls, Ore.
Berger Engineering Co., Seattle, Vancouver, B.C.
Columbia Steel Casting Co., Portland.
Cook Bros., Los Angeles, Calif.
Clyde Iron Works, Duluth, Minn., Seattle, Portland
Electric Steel Foundry, Portland
Fleco Corp., Jacksonville, Fla.
L. B. Foster Co., Pittsburgh, Pa.
Garrett Distributors, Enumclaw, Wash.
Gearmatic Co., Ltd., Vancouver, Pa.
Hibbard-Riley Co., Portland
Hufford Machine Works, El Segundo, Calif.
I'Anco Products, Vancouver, B.C., Portland, Ore.
Paul E. Keeney Co., Portland, Ore.
R. G. LeTourneau Inc., Longview, Texas
The Lufkin Rule Co., Saginaw, Mich.
Mar Hook Equipment Co., Montesano, Wash.
Martin-Decker Corp., Long Beach, Calif.
Maxi Corp., Los Angeles, Calif.
McCaffrey-Ruddock Tagline Corp., Los Angeles, Seattle, Portland, Medford, Tacoma, Vancouver, B.C.
Nelson Iron Works, Seattle, Wash.
Pacific Car and Foundry Co., Benton, Wash., Chicago, Ill.

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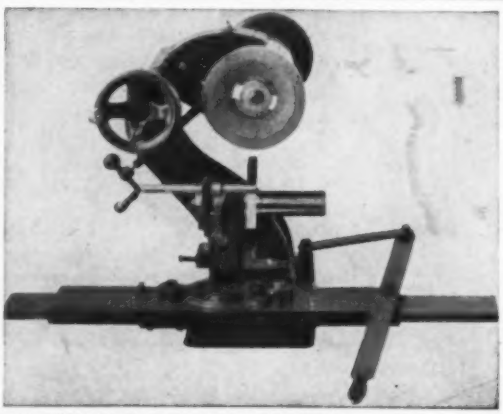

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Sauerman Bros. Inc., Bellwood, Ill.
Skagit Steel & Iron Works, Sedro Woolley, Wash.
Skookum Co., Portland, Ore.
Taylor Machine Works, Louisville, Miss.
Washington Iron Works, Seattle
Fred E. Barnett Co., San Francisco, Ukiah, Eureka, Calif.; Klamath Falls, Ore.
Westminster Iron Works, New Westminster, B.C.
Young Iron Works, Seattle.

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American Hoist & Derrick Co., St. Paul, Minn.
Baldwin-Lima-Hamilton Corp., Lima, Ohio, Seattle, Los Angeles, Atlanta, Ga., Dallas, Texas
Berger Engineering Co., Seattle, Vancouver, B.C.
Bucyrus-Erie Co., Milwaukee, Atlanta, Ga., Dallas, Texas, Seattle, So. San Francisco, Los Angeles
Caterpillar Co., Peoria, Ill.
Clark Equip Co. (Michigan Loader) Benton Harbor, Mich.
Gerlinger Carrier Co., Dallas, Ore.
Harnischfeger Corp., Milwaukee, Wis.
Hayes Mfg. Co., Vancouver, B.C.
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Manitowoc Engineering Co., Manitowoc, Wis.
Marion-Osgood-General, Marion, Ohio
Northwest Engineering Co., Chicago, Seattle
Pettibone Mulliken Corp., Chicago
Quickway Truck Shove Co., Denver, Colo.
Schield Bantam Co., Waverly, Iowa
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Taylor Machine Works, Louisville, Miss.
Thew Shovel Co., Lorain, Ohio
Tyee Machinery Co., Ltd., Vancouver, B. C.
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Washington Iron Works, Seattle, Wash.
Fred E. Barnett Co., San Francisco, Eureka Ukiah, North Sacramento, Calif.; Portland, Klamath Falls, Ore.

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Moisture Register Co., Alhambra, Calif.

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Saranac Machinery Co., Benton Harbor, Mich.
Turner Machinery Co., San Francisco

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Luber-Finer Co., Los Angeles, California

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D-A Lubricant Co., Inc., Indianapolis, Indiana
Freedom-Valvoline Oil Co., San Francisco
General Petroleum Corporation, Los Angeles, San Francisco, Seattle
Imperial Metalic Lubricants, Seattle
Lubriplate Division, Fiske Bros. Refining Co., New York City
Goodyear Rubber & Asbestos Co., Portland
C. A. Norgren Co., Denver, Colorado
Quaker State Oil Refining Corp., Oil City, Pa.
Richfield Oil Corp., Los Angeles
Shell Oil Co., Portland, Seattle, Tacoma, Spokane, Portland, San Francisco, Vancouver, B.C.
Standard Oil Co. of California, San Francisco
The Texas Corporation, New York City
Tidewater Associated Oil Co., San Francisco
Union Oil Company, Los Angeles

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Evinrude Motors, Milwaukee, Wis.
Lawson Outboard Motors
Johnson Motors, Chicago, Illinois
Mercury Outboards, Fond du Lac, Wisc.
Scott-Atwater

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Crown-Zellerbach Corp., Portland, San Francisco, Seattle
Kimberly-Clark Corp., Neenah, Wis.; Seattle

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Beall Pipe & Tank Corp., Portland

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Hermance Machine Co., Williamsport, Pa.
Idaco Engineering Co., Oakland, Calif.
Irvington Machine Works, Portland
Turner Machinery Co., San Francisco
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Mereen-Johnson Machine Co., Minneapolis, Minn.
Newman Machine Co., Inc., Greensboro, N.C.
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Stetson-Ross Machine Co., Inc., Seattle
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Vonnegut Moulder Corp., Indianapolis, Ind.
Baxter D. Whitney & Son., Inc., Greensboro, N.C.
S. A. Woods Machine Co., Boston, Portland, Little Rock, Ark., Memphis, Tenn., San Mateo, Calif.
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Crawford & Doherty Foundry Co., Portland
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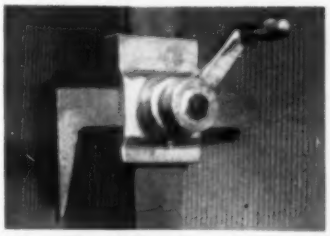
Erie Eng. & Mfg. Co., Erie, Pa.
Ederer Engineering Company, Seattle
Fluckinger Machine Works, Seattle
Chas. E. Francis Co., Huntington, Ind.
Fjellman-American Co., Joliet, Ill.
Globe Manufacturing Co., Tacoma, Wash.
Greenlee Bros. & Co., Rockford, Ill., Seattle, San Francisco, High Point, N.C.
Jackson Industries, Birmingham, Alabama; Portland
Jenkins Woodworking Division, Curt Joa, Sheboygan, Wisc.
St. Joe Iron Works, Benton Harbor, Mich.
Kimwood Machine Co., Cottage Grove, Ore.
L-M Equipment Co., Portland
Lamb-Grays Harbor Co., Hoquiam, Wash.
Lawrence Machine & Mfg. Co., Seattle
Longview Paint & Varnish, Longview, Wash.
Mattison Machine Works, Rockford, Ill.
Moore Dry Kiln Co., Portland
Mereen-Johnson Co., Minneapolis
Merritt-Solem Corporation, Lockport, N.Y.
Northwest Marine Iron Works, Portland
Northwest Syndicate (Mann-Russell) Tacoma, Washington
The Oakley Company, Bristol, Tenn.
Peninsula Iron Works, Portland
Portland Iron Works, Portland
E. V. Prentice Company, Portland
Preston Woodworking Machinery Co., Preston, Ontario, Vancouver, B.C.
Proctor & Schwartz Inc., Philadelphia
Republic Electric & Development Co., Seattle
Schnitzer & Wolf Machinery Co., Portland
Siempelkamp Co. Krefeld, (Germany)
Skoog Engineering Co., Olympia, Wash.
Solem Machine Co., Rockport, Ill.
The Veneer Machinery Corp., Grand Rapids, Mich.
Veneer Machines Div., Jackson Industries, Birmingham, Ala.
Wall-Western Chemical Co., Portland
Washington Iron Works, Seattle, Wash.



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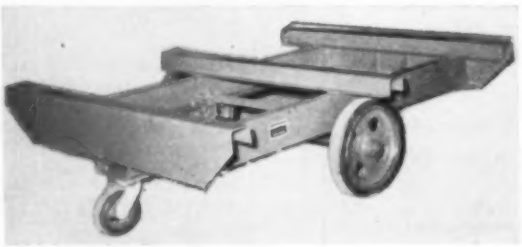

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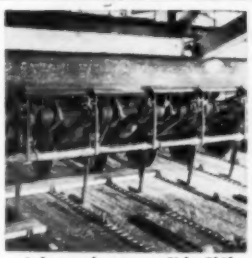
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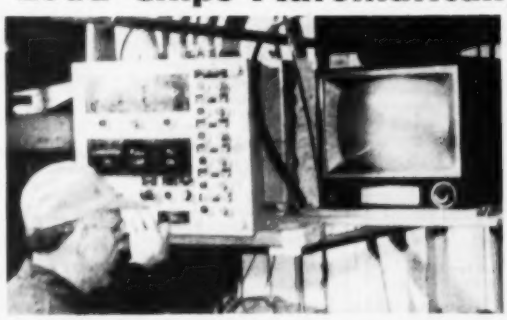
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L-M Equipment Company, Portland, Ore.

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Western Gear Corp., Lynwood, Calif., San Francisco; Houston and Dallas, Texas; Seattle; Portland; Spokane

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Laher Spring & Tire Corp., Oakland, Calif.
Zimmerman Spring Works, Portland

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Vikina Automatic Sprinkler Co., Seattle; Portland; San Francisco; Vancouver, B.C.; Calgary, Canada

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Gear Engineering & Manufacturing Co., Lynwood, Calif.
Link-Belt Co., Chicago, San Francisco, Seattle, Portland
Soule Steam Feed Works, Meridian, Miss.

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American Manufacturing Co., Vancouver, B.C.
City Garage & Machine Co., Qupora, Miss.
C. M. Lousted & Co., Seattle
Lawson Stacker Co., Memphis, Tenn.
Moore Dry Kiln, Portland, Jacksonville, Fla.
Stetson-Ross Machine Co., Inc., Seattle

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Stanley Works, New Britain; Seattle; Portland

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Firestone Tire & Rubber Co., Akron, Ohio
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Schneider Division of Westinghouse, Muncie, Indiana
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Harris Manufacturing Co., Stockton, Calif.
Hensley Equipment Co., San Leandro, Calif.
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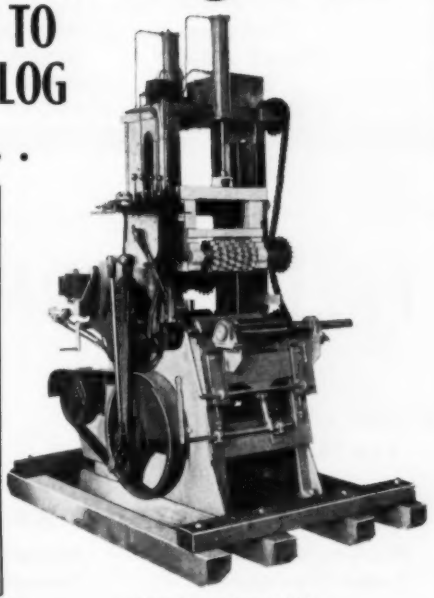

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Hayes Manufacturing Co., Vancouver, B.C.
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Reo Motors Inc., Lansing, Mich.
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Spicer Manufacturing Co., Compton, Calif.
Timken-Detroit Axle Div. Detroit, Mich.
Western Machinery Corp., Portland

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Valvair Corp., Akron, Ohio
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Vickers, Inc., Detroit; Seattle
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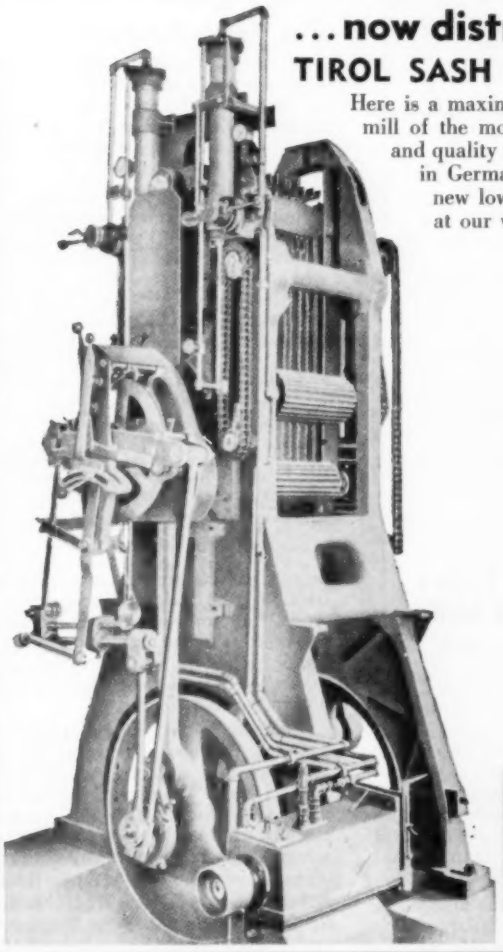

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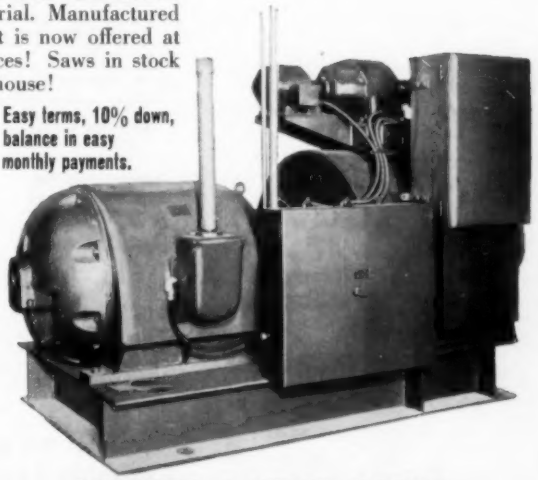

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You'll cut damage loss and improve veneer quality with this new lathe drive! It requires a minimum of upkeep and is simple to operate!

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—WHERE TO BUY—

The dealers and distributors, whose names are listed below, placed advertisements in this issue of THE LUMBERMAN to identify their names with nationally known products. This "Where-To-Buy" listing is intended to help you find quickly and easily the nearest dealer who handles the product you want.

CALIFORNIA

EUREKA

Fred E. Barnett Co., see San Francisco

NORTH SACRAMENTO

Fred E. Barnett Co., see San Francisco

OAKLAND

Idaco Engineering & Equipment Co.

Newman Machine Co., planers, matchers
Ekstrom-Carlson Co., high speed moulders, routers, shapers
McDonough Mfg. Co., horizontal and vertical resaws
Frick Co., small sawmills, edgers, trimmers
Mater Machine Works, automatic sawmills, dogs, carriages
Mill Engineering & Supply Co., cant and log gang saws
Irvington Machine Works, cut-off, trim saws
Jones & Orth, cutter heads and knives
Simonds Saw & Steel Co., circular and band saws, saw blades, shanks, and bits
Baxter D. Whitney & Sons, planers, automatic shapers, variety saws, mortisers
Hermance Machine Co., rip saws and high speed moulders
Marathon Machinery Co., gang saws for small mills
C & D Welding Works, burners, conveyors, fork lift dump boxes

REDDING

C & D Welding Service, Inc.

Burners
Log Hauls
Conveyors
Dump Boxes
Conveyor Drives
Custom Built Steel Structures

SAN FRANCISCO

Turner Machinery Co.

Band Resaws—Single and Tandem Twin
Band Ripsaws—Single & Tandem Twin
Circular Gang Ripsaws
Resaw Feeders
Jointer & Set-Up Stands
Cleat Machines
Combination Cleat Machine & Pony Planer
Saranac Stapling and Corrugated Fastening Machinery
Industrial Mfg. Co. finger jointing, scarfing, and assembling machinery
Bell Machine Co., High Frequency Presses, gluing, doweling, mitring machinery, power door clamps
Irvington Machine Works, cut-off saws, trimmers
CKL Machinery Co., double end tenoners, double end cutoffs

Fred E. Barnett Co.

Washington Iron Works Trakloaders, log loaders, yarders
Sumner Iron Works sawmill machinery, chippers, hydraulic barkers
Columbia-Geneva Steel Div., U. S. Steel Co., Tiger Brand Wire Rope
Anderson Steel Products heat treated forgings, tongs, clevises, loading and butt hooks

UKIAH

Fred E. Barnett Co., see San Francisco

OREGON

KLAMATH FALLS

Fred E Barnett Co., see Portland

PORTLAND

Fred E. Barnett Co.

Washington Iron Works Trakloader, log loaders, yarders
Columbia-Geneva Steel Div., U. S. Steel Co., Tiger Brand Wire Rope
Anderson Steel Products heat treated forging, tongs, clevises, loading and butt hooks

Robert H. Casey Co.

Gang mills

Conway & Fields Sales Co.

Plywood machinery
Plywood lathes
Panel feeders—automatic
Baldwin presses
Moisture meters

General Machinery Co.

Yates American Machine Co.
Woodworking and sawmillery machinery
Machine tools

Goodyear Rubber & Asbestos Co.

Lubriplate Div., Fiske Bros. Refining Co., New York City, oils and lubricants
Johns-Manville Co., New York City, fire protection equipment, brake linings
Boston Woven Hose & Rubber Co., Cambridge, Mass., belting, hose
American Pulley Co., Philadelphia, mill supplies

J. W. Minder Chain and Gear, Portland, Los Angeles

Dodge Mfg. Corp.
Moline Malleable Iron Co.
Morse Chain Co.
U. S. Motors

E. V. Prentice Co.

Victor veneer jointers
Victor veneer clippers
Raimann veneer patchers
Victor patch strip loader and hog

Portland Mfg. Co.

Marathon gangs
Sawmill machinery and supplies

Schnitzer and Wolf

Tirol gangs
Sawmill machinery and supplies

Western Machinery Corporation

Air valves and cylinders
Transmissions
Gears and Gear Motors
Plywood Machinery

Roy Smythe Co.

Heppenstall knives
Carthage chippers

Zidell Machinery & Supply Co.

Drives for log carriages, edgers and veneer equipment
Conveyors
Sawmill machinery

WASHINGTON

SEATTLE

Northwest Chains and Sprockets

Jeffrey Chain
Eberhardt-Denver speed reducers
Whitney chain
American Pulley Co.

Star Machinery Co., Seattle, Portland, Spokane

Woodworking machinery
Newman planers
Simonds saws
Wurster & Dietz gangs
Marion-Osgood shovels

Tallman Machinery Co., Seattle

Greenlee skinner and cutoff saws
Mattison sanders
Lawrence auto-feeders, stackers, glue spreaders
Haywood Cutterheads
Columbia hot presses
Lamb Grays Harbor hogs, jointers
Raybond electronic gluers

Tax Policy Favored

• A Toronto tax expert told the Royal commission forestry hearing meeting in British Columbia that the B.C. practice of collecting taxes on logging profits of more than $25,000 is good policy.

J. Harvey Perry, Canadian Tax Foundation, told the commission he could see no valid reason for protest against the profit tax principle itself when ample precedent had been established for 50 years. Most provinces have adopted the system of taxing only profits in the exploitation of natural resources, said Perry, adding, "I believe where logging is concerned, property taxes are undesirable until an operational profit emerges."

Albert M. Moore, an associate in the foundation, stated in his brief that property taxes for private forest lands in B.C. average $1.40 per acre.

Two Texas Firms Combine Lands & Mills

• Consolidation of Southern Pine Lumber Co., Diboll, Texas, and the Temple Lumber Co., Pineland, Texas, became effective February 1, creating a single corporation having an annual sales volume of $25,000,000. The combined operations have 2,000 employes and fee ownership of 400,000 acres of forest land under modern management. Corporate activity will be as the Southern Pine Lumber Co., Inc., with headquarters at Diboll.

Facilities included in the merger, in addition to each company's large modernized sawmill, include the world's largest manufacturing plant for round handles, the largest production of wood flour for composition roofing in the southwest, a toilet seat plant, a large precision shaped-wood parts plants, a box factory, and 33 retail lumber yards in Texas.

Officers of the company are: W. Temple Webber, Chairman of the Board; Arthur Temple, Jr., President; T. L. Latane Temple III, Vice President; G. S. Smith, Secretary-Treasurer; and, Aubrey Cannon, assistant Secretary-Treasurer. Directors include the officers and Thomas Temple Keeler, Robert Temple Keeler, D. G. McNair, E. C. Prud'homme, Clyde Thompson, and E. G. Farley.

#17A STETSON-ROSS MATCHER

6" x 20", 10 knife motorized, ball bearing. One set of heads, side heads for 2" square cut. All controls and switch panel. All dust hoods. Woods steel frame feed table. In excellent condition. Reasonably priced.

D-7 CATERPILLAR TRACTOR

Equipped with bulldozer, front power control unit and towing winch.

Willamette Builders Supply Co.

Aumsville, Oregon, Telephone 304, Teletype 79

Southern Forests and Sawmills Are Sold

• Olin-Mathieson Chemical Corp. has announced sale of 495,000 acres of forest land and two sawmill operations to International Paper Co. for $33 million cash.

Left to Olin is 635,000 acres of forest land centering around Monroe, La., where its Brown Paper Mill Co. kraft mill may have a dissolving pulp mill companion; a modernized large sawmill at Huttig, Ark.; a sawmill at Winnfield, La.; and, at Shreveport, La., two wood preserving plants and a flooring plant.

In Jan., 1952, Olin-Mathieson absorbed Frost Lumber Industries, Inc., Shreveport, La., reported then as having 450,000 acres of which about 50,000 was in Arkansas and the balance divided between Louisiana and Texas. With this, went the Huttig mill (Union Sawmill Co.); sawmills at Mansfield, La., Waskon and Nacogdoches, Texas; and flooring production and preserving facilities in Shreveport.

More recently, Olin-Mathieson acquired Brown Paper Mill Co., at Monroe with 465,000 acres of forest lands. Recently announced was acquisition of the sawmill facilities of Mansfield Hardwood Lumber Co., at Winnfield, La., while that company's 93,658 forest land acres went to Robert Gair Co., for its Southern Advance Bag & Paper Co. Div. at nearby Hodge, La.

International Paper Co. acquires the Mansfield, La., sawmill with large acreage of forest land serving it (perhaps 175,000 acres); the sawmill at Nacogdoches, Texas, with perhaps the balance of 175,000 acres. For International Paper Co. the deal places a substantial supply of pulpwood to serve its mammoth paper mills at Springhill, La., north of Shreveport, La., Bastrop, La., and Camden, Ark.

• **A TWO-MAN WAR AGAINST** one of the smallest but most devastating scourges of the British Columbia lumber industry—the Ambrosia beetle—will be started shortly at the University of British Columbia. The project is being financed by the special fund of U.B.C. president N. A. M. MacKenzie and B.C. Forest Products. The experiments will be made in cooperation with the Federal government.

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ARCATA Phone 1123 • 1041 F St.

UKIAH Homestead 2-3490 • N. Highway 101

• **DRIVING THE FRASER** River with bundled logs, pioneered in 1954 by McCorkill Bros., dumping logs at North Bend for the ride through Hell's Gate, has been adopted during the past few months by several other companies, some of them operating from points much farther up the river. Pacific Pine Lumber Co., which has a mill near New Westminster, has been sending logs down the Fraser all the way from Soda Creek. Doug McColl has been operating near Lytton; Len Hasche at North Bend and Rosebank Logging Co. near Lillooet. The J & J Logging Co., affiliated with Dewey Anderson's Fleetwood Logging Co., has also been driving the Fraser to some extent. Most of the logs are picked up near Yale by towboats operated by Cecil Cosulich's River Towing Co. for rafting to mills at the mouth of the Fraser.

Floods Cause Extensive Forest Damage in 1955

• Preliminary estimates of damage to improvements on the national forests of the Pacific Northwest Region reveal that flood damage from November and December 1955 storms was the second highest on records of the U. S. Forest Service. Peak, all-time damage occurred during the late spring and early summer of 1948 when winter snows were quickly melted by sudden warm weather with heavy rains, causing losses of from three to four million dollars.

Cost of replacing and rebuilding improvements damaged or lost from the 1955 storms has been set at $1,108,000. Actual rehabilitation may run considerably higher. The racing flood waters wreaked most havoc on roads, bridges, and culverts, but took its toll of other improvements also.

FOR SALE

66" SUMNER VENEER CHIPPER

1—66" Summer Veneer Chipper 4 years old, complete with sheaves & Vee belts. With 75 HP 3/60/440 volt G.E. 1800 RPM Motor, Type K, with chain feed works. Located at Lebanon, Oregon.
Without starter ---------- $7500.00
With starter ---------- $8000.00

50" NORMAN CHIPPER
18 Mo. Old

50" C.M.E. Norman Chipper #505 complete with the following:
10 x 10" Spout
1—DN Hanchett 40" grinder with special attachment for grinding four knives per set up.
1—200 HP G.E. slip ring mtr. 600 RPM 3/60/2200 Type 1 form M Serial No. 1775375
1—pulley 33" PD—D sec. 12 groove
1—pulley 22.5 PD—D sec. 12 groove
12—only 195 D sec. V-belts
1—G.E. Drum controller J108C #447553
1—2500 Volt FK G.E. Oil Switch
1—440 Volt FK G.E. Oil Switch
As is, where is—fob. Foster, Oregon---$13,500.00

CARRIERS

4—4MHS Gerlinger Carriers
1—1947 ---------- $750.00
2—1948 ---------- $800.00 Ea.
1—1949 ---------- $850.00

HYDRAULIC SLAB DEBARKER

1—Hydraulic 2 nozzle debarker equipped with the following:
1—400 HP 3600 RPM 3/60/440 volt Model 5K 337802 Serial No. 0D6690475 Frame No. 6337S Direct connected to the following on integral base;
1—Bingham pump, Serial No. 13809 Type 3 MSB 3600 RPM—350 GPM—2680 Ft. Head
1—100 HP, 3600 RPM—3/60/2200 Volt frame 504 S Allis Chalmers Motor Serial No. 23592K-820NS-7-1 Direct connected to the following on integral base;
1—Bingham pump #16178 Type 3MSB-3 3600 RPM 350 GPM, 693 ft. head. Sheet metal frame and housing included as is, where is, f.o.b. Dallas, Oregon ---------- $10,000.00

BUSES

1950 Ford 6 cylinder lumber truck—steel bed 20 ft long ---------- $1,200.00
1—1949 Chevrolet Crew Bus ---------- $900.00 net
1—1948 Chevrolet Crew Bus ---------- $750.00 net
2—1955 Ford V-8 crew bus 1½ Ton 24 passenger with Hammond body---$3,000.00 each

YARDERS AND SHOVELS

1—Washington 3-drum yarder—size 175—with Hercules Motor and twin disc clutch. Gearing and spools in good condition f.o.b. Foster, Oregon---$1,000.00

AIR COMPRESSORS

1—LeRoi Tractair air compressor 105 cu. ft. cap. ---------- $1,500.00

TRAILERS

1—Pointer Willamette 24 wheel, 3 axle Low boy tranport trailer equipped with 8:25 x 15 tires; capacity is #45,000 lbs.---------- $1,500.00

ALL PRICES ARE NET TO US, SUBJECT TO PRIOR SALE AND INSPECTION—F.O.B. DALLAS.

For Further Information, Write, Call TWX 80, or Phone Mayfair 3-2351, Purchasing Department

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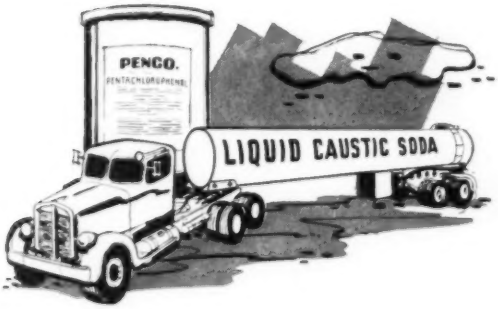

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(Below) Yellow Strand delivers skyline carriage from water's edge to a point 2500 feet uphill in 90 seconds or less.

Yellow Strand

helps produce "Green Gold" at Ketchikan

For years loggers have dreamed of tapping the giant forest reserves of Alaska. Poor transportation, inadequate supply depots, either rocky ground or very soft ground, and extremely damp weather have always kept them out.

Now, the Ketchikan Pulp Co. has produced a "green gold rush" in Alaska, with the beginning of logging operations at Hollis Camp and Neets Bay, 35 airmiles north of Ketchikan. Yellow Strand Wire Rope is helping in the extremely tough job of getting logs out of the woods.

Experience of loggers proves the built-in qualities and long life of Yellow Strand Wire Rope. It is giving better service because it's manufactured to the highest standards of precision. See your Broderick & Bascom Distributor for more facts about Yellow Strand Wire Rope.

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